

**EFFECTIVENESS OF VALIDATION THERAPY UPON THE LEVEL OF
COGNITION OF OLD AGE PEOPLE**

**BY
R.SINDHUMATHI**

**A DISSERTATION SUBMITTED TO THE TAMILNADU DR.M.G.R.MEDICAL
UNIVERSITY, CHENNAI, IN PARTIAL FULFILMENT OF THE
REQUIREMENTS FOR THE DEGREE OF MASTER
OF SCIENCE IN NURSING**

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COGNITION OF OLDAGE PEOPLE**

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DECLARATION

I hereby declare that the present dissertation entitled **“Effectiveness of Validation Therapy upon the Level of Cognition of Old Age People”** is the outcome of the original research work undertaken and carried out by me, under the guidance of **Dr. Latha Venkatesan, M.Sc. (N), M.Phil., Ph.D., Principal**, of Apollo College of Nursing, **Mrs.Anuradha.C, M.Sc. (N), M.Sc. Psychology.**, Associate Professor, Department of Mental Health Nursing, Apollo College of Nursing, Chennai.

I also declare that the material of this has not found in any way, the basis for the award of any degree or diploma in this university or any other universities.

II Year M.Sc. (N) Student

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SYNOPSIS

A Quasi Experimental Study was conducted to Assess the Effectiveness of Validation Therapy upon the Level of Cognition of Old Age People at selected Old Age Homes, Chennai.

The objectives of the study

1. To assess the level of cognition in control and experimental group of old age people before and after the validation therapy.
2. To assess the effectiveness of validation therapy by comparing the level of cognition in control and experimental group of old age people before and after validation therapy.
3. To determine the level of satisfaction in experimental group of old age people regarding administration of validation therapy.
4. To find out the association between the selected demographic, clinical variables and the level of cognition before and after validation therapy in control group of old age people.
5. To find out the association between the selected demographic, clinical variables and the level of cognition before and after validation therapy in experimental group of old age people.

The conceptual framework was made based on Dunn's high level wellness model. The variables of the study were validation therapy and cognition. Null hypothesis was formulated. The level of significance selected was $p < 0.05$. An extensive review of literature was made based on the opinions of the experts. An experimental

study of pre-test and post-test design was used. The study included 60 old age people who were selected by purposive sampling 30 were in the Experimental group and 30 were in the Control group. The study was conducted at Sree Seva Mandhir old age home, Chennai.

Demographic variable proforma, Clinical variable proforma, Mini- Mental Status Examination and Rating scale on level of satisfaction of validation therapy were the various tools used by the researcher. The validity was obtained from various experts and reliability was obtained through inter rater evaluation and found to be highly reliable. The main study was conducted after the pilot study.

The level of cognition was assessed for the experimental and control group of old age people. The validation therapy was provided for 1 hour for the experimental group. Then the levels of cognition were assessed again for both the groups. The level of satisfaction on validation therapy was assessed among the experimental group of old age people. The data obtained were analysed using Descriptive and Inferential statistics.

Major Findings of the Study

- Majority of the old age people in control and experimental group were having pension as a source of income (100%, 86.6%), having monthly income Rs. 1000-2000 (100%, 100%), belongs to Christian religion in control group (53.3%) and (100%) were Hindus in experimental group respectively. Most of the old age people in control group and experimental group were females (56.7%, 66.7%), divorced and widowed (53.4%, 46.6%), have completed primary education (53.33%, 50%) respectively. A significant percentage of the

old age people duration of stay in the old age home more than 6 years (43.4%) in control group and most of them in experimental group (60%) respectively.

- Majority of them had moderate physical activity (80%, 66.66%), not having history of taking medications for major illness (100%, 100%), not hospitalized within last five years (100%, 100%), not smoked (100%, 100%), no history of alcoholism (100%, 100%) and did not practice any relaxation technique (60%, 46.66%) in control and experimental group respectively. Significant percentage of them had undergone relaxation therapy (33.33%, 30%) and had sedentary physical activity (20%, 30.33%) in the control and experimental group respectively.
- In control group, most of the old age people had moderate level of cognitive impairment (53.34%) before validation therapy and there was not much differences after validation therapy. In experimental group, most of the old age people had mild level of cognitive impairment (56.67%) before validation therapy whereas after validation therapy it has been improved to normal level of cognition (76.66%).
- The mean and standard deviation of cognition score before therapy was low ($M=20.03$, $SD=2.92$) in comparison with the mean and standard deviation of cognition score after therapy ($M=23.9$, $SD=3.01$). The difference ($t=7.17$) was found statistically significant at level of confidence $p<0.001$. So Null Hypothesis H_{01} was rejected.
- There was no significant association between the selected demographic, clinical variables of old age people and level of cognition in control group before and after validation therapy. So, Null Hypothesis H_{02} was retained.

- There was no significant association between the selected demographic, clinical variables of old age people and level of cognition in experimental group before and after validation therapy. So, Null Hypothesis H_{03} was retained.
- Majority of the old age people were highly satisfied with all the aspects of administration of validation therapy. (90%).

This study demonstrated that Validation therapy will help to improve the level of cognition in old age people.

Recommendations

- The study can be conducted on larger sample to generalize the results.
- The study can be conducted in community settings.
- A comparative study can be conducted to evaluate the effectiveness of various other interventions to help the old age people in order to improve their cognition.
- A longitudinal study with time series design can be conducted with the post test of an interval of 2, 4, 6 months to assess how long the effectiveness of the programme lasts.
- A comparative study can be conducted to assess cognition among old age people, family members and health care professionals.

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Chapter I
Introduction

CHAPTER I

INTRODUCTION

Background of the study

“Old age is the most unexpected of all the things that can happen to a man.”

-Leon Trotsky

Old age is viewed both as a stage in the life span of individual and also a segment of the population of the society. The public considers people as old, those who are 50-75 years of age. There are currently 580 million elderly aged 60 and over in the world and of these 355 million live in the developing countries. In India, the old age population aged 60 years and above account for 7.4% of the total population. From 5.6% in 1961 and it is projected to rise to 12.4% of the population by the year 2026.

In India about 7% of the elderly population is over the age of 60 and it is expected to increase by 20% by the year 2030. By the year 2030 older adults will comprise 20% of the population, compared to 13% in 2000. By the year 2050, the “oldest old” segment of the population is anticipated to increase between 24% and 30%. In a study conducted by Vijayanunni (1997) it was also worked out by the experts committee the 60 plus population of India will grow from 56 million in 1991 to 96 million in 2011 and 113 million in 2016.

Old people have limited regenerative capabilities and are more prone to disease, syndromes & sickness than other age groups. There is often a common physical decline, and people become less active. Old age can reason, along with other things; hair loss, change of hair colour gray or white, wrinkles and liver spots on the skin. Slower

reaction times, reduced ability to clear thinking. Lessened learning, diminished eyesight, difficulty in recalling memories, lessening or termination of sex. Sometimes because of physical symptoms there is a decline in libido. Greater weakness to bone diseases such as osteoarthritis.

Cognition refers to the mental process of comprehension, judgement, memory and reasoning in contrast to emotional and volitional process. Cognition is the scientific term for mental processes. These processes include attention, remembering, producing and understanding language, solving problems, and making decisions. Cognition is studied in various disciplines such as psychology, philosophy, linguistics, and computer science. Usage of the term varies in different disciplines; for example in psychology and cognitive science, it usually refers to an information processing view of an individual's psychological functions. Not everyone declines in cognitive function with age.

Elderly people who exercise at least once a week, have at least a high school education and a ninth grade literacy level, are not smokers and are more socially active are more likely to maintain their cognitive skills through their 70s and 80s, according to research published in the June 9, 2009, the medical journal of the American Academy of Neurology. The study followed 2,500 people age 70 to 79 for eight years, testing their cognitive skills several times over the years. Many of the participants showed decline in cognitive function. Fifty-three percent of the participants showed normal age-related decline and 16 percent showed major cognitive decline. However, 30 percent of the participants had no change or improved on the tests over the years.

Cognitive dysfunction may occur in some patient's who receive chemotherapy. Cognitive deficits are often subtle, although they are observed consistently in a proportion of patient's, may be durable and can be disabling. Deficits have been observed in a range of cognitive functions. Underlying mechanisms are unknown, although preliminary studies suggest there may be genetic predisposition and that cognitive impairment may be accompanied by changes in the brain which could be detectable by neuroimaging.

Mild cognitive impairment is a transitional stage between normal aging and dementia, according to background information in the article. Previous studies have found an association between mild cognitive impairment and diabetes. Poor blood glucose control over time may lead to neuron loss, and diabetes is associated with cardiovascular disease risk and stroke, which also may increase the risk of cognitive impairment.

In the general population, advancing age is associated with cognitive impairment because of the increasing prevalence of medical conditions such as Alzheimer's disease, Parkinson disease and stroke. Approximately 5% to 8% of 65 years aged older and one third of 85 years aged older are affected with dementia. Cognitive impairment can also be caused by factors other than age. Medications, nutritional deficiencies, depression, infection and fluid shifts have all been implicated as causes in the general population. In particular, dehydration has been associated with cognitive impairment in elderly patients, perhaps because it is an indicator of infection. The association between dehydration and cognitive impairment in patients with heart failure has not been studied before.

Pharmacological therapies are not as much effective in improving the cognitive function. For cognitive improvement there are some sort of standard non-pharmacological therapies which will improve the cognitive function in the old age people such as Behavioural therapy, Reality orientation, Reminiscence therapy and Validation therapy used in day to day practice.

Validation therapy defined as the use of a method of therapeutic communication with elderly persons that focuses on emotional rather than factual content. It was developed by NAOMI FEIL between the year 1963 and 1980 for older people with cognitive impairment. Mainly it is based on the principle of validation, the acceptance of the reality. The basic principle of the therapy is the concept of validation or the reciprocated communication of respect which communicates that the other's opinions are acknowledged, respected, heard and (regardless whether or not the listener actually agrees with the content), they are being treated with genuine respect as a legitimate expression of their feelings. Feil's own approach classifies individuals with cognitive impairment as having one of four stages in a continuum of dementia. These stages are: Mal orientation, Time confusion, Repetitive motion, Vegetative state.

Validation therapy uses different specific techniques, and it has attracted criticism from researchers who dispute the evidence for some of the beliefs and values of validation therapy, and the appropriateness of the techniques; as there are not enough quality evidences proving the efficacy of such method for people with dementia. By this therapy the old age people speech has been improved, less negative affect (crying, hitting); more positive affect (smiling, talking, helping others) and they become more aware of their external reality; they talked outside of group meetings.

Validation therapy is a therapeutic communication technique to express their feelings to reduce their stress and involve them in day to day activities. The researcher has used some simple techniques both verbal and non- verbal which is easy to practice. Since validation therapy inexpensive, entertaining, stimulating, thought provoking and motivating factor for positive thinking. Validation support is to reduce stress and restore self-esteem. It also helps in behaviour modification, increases the daily activity, stimulation of self- care.

Validation therapy improves the sense of integrity, sense of dignity, sense of worth and quality of life. Thus nurse can plan for various studies which are incorporated with the regular activities in various settings such as hospitals, old age home and in community.

Need for the Study

Old age is considered as a risk period because they need assistance for most of their day to day activities. They are neglected by everyone and are highly dependent in the community. Aging is one of the developmental issues with social, economic and political impacts.

India has finally woken up to the needs of the country's elderly. With the number of people in the 60-plus age group in India expected to increase to 100 million in 2013 and to 198 million in 2030, the health ministry is all set to roll out the National Programme for the Health Care of the Elderly (NPHCE). A ministry note, available with TOI, estimates that the elderly population will increase to 12% of the total population by 2025, 10% of which would be bedridden, requiring utmost care.

According to the World Health Organization (2009), the number of 60 year old will increase 1.2 billion by the year 2025. This finding is very important in healthcare to plan the health care services. In Canada, persons aged 65 years and older represent the fastest growing population, with an 11.5% increase in prevalence between 2001 and 2006 (Statistics Canada 2009) ,dementia and cognitive impairment not meeting the criteria for dementia are estimated to affect 8% and 16.8% of Canadians aged 65 years and older, respectively. The lifetime probability of becoming disabled in at least two activities of daily living or of being cognitively impaired is 68% for people age 65 and older.

A study was conducted by Brenda Plassman and colleagues from medical psychology department at Duke University, reported 856 persons aged 71 or older drawn from a nationally representative sample. Subjects provided a clinical and medical history were examined neurologically and underwent neuropsychological tests. The researchers then analyzed the results to determine how many of the subjects reached the threshold for dementia with normal and impaired cognition. Out of the 856 subjects, 241 had impaired cognition without dementia. The investigators used their findings about the subjects with impaired cognition without dementia to compute a national prevalence estimate for the condition. They found that 22 percent of Americans aged 70 or older that is, 5.4 million as of 2002 had dementia. As Plassman told Psychiatric News, “The finding that 22 percent over age 70 have mild cognitive problems is sobering and clearly illustrates the importance of this problem in late life.”

Validation therapy defined as the use of a method of therapeutic communication with elderly persons that focuses on emotional rather than factual content. It was

developed by NAOMI FEIL between 1963 & 1980 for older people with cognitive impairment. The basic principle of the therapy is the concept of validation or the reciprocated communication of respect which communicates that the other's opinions are acknowledged, respected, heard and (regardless whether or not the listener actually agrees with the content), they are being treated with genuine respect as a legitimate expression of their feelings.

As old age has many physical symptoms we should focus upon the psychological problems in day to day life. The old age is more prone to get depression, sleep problems and especially cognitive problems. The research studies are more concentrated and done only to resolve depression through some sort of relaxation techniques and psychotherapies. For cognitive improvement there are some sort of therapies such as reminiscence therapy, reality orientation therapy and validation therapy used in day to day practice.

Hitch noted that validation therapy promotes contentment, results in less negative affect and behavioural disturbance, produces positive effects and provides the individual with insight into external reality. It was, however, suggested that therapists could become too focused on confused communication and could fail to identify simple explanations such as pain or hunger. Neal & Briggs (2002) evaluated validation therapy across a number of controlled trials, employing cognitive and behavioural measures. They concluded that despite some positive indicators, the jury was still out with respect to its efficacy.

Validation therapy is a therapeutic communication technique to express their feelings to reduce their stress and involve them in day to day activities. The researcher has used some simple techniques both verbal and non- verbal which is easy to practice. Since validation therapy inexpensive, entertaining, stimulating, thought provoking and motivating factor for positive thinking. Validation support is to reduce stress and restore self-esteem. It also helps in behaviour modification, increases the daily activity, stimulation of self- care. Even though Validation therapy is very useful and cost effective, there is paucity of research in this area. Thus the researcher was interested to do the study.

Validation therapy improves the sense of integrity, sense of dignity, sense of worth and quality of life. Thus nurse can plan for various studies which is incorporated with the regular activities in various settings such as hospitals, old age home and in community.

Statement of the Problem

A Quasi Experimental Study to Assess the Effectiveness of Validation Therapy upon the Level of Cognition of Old Age People at selected Old Age Homes in Chennai.

Objectives of the Study

6. To assess the level of cognition in control and experimental group of old age people before and after the validation therapy.

7. To assess the effectiveness of validation therapy by comparing the level of cognition in control and experimental group of old age people before and after validation therapy.
8. To determine the level of satisfaction in experimental group of old age people regarding administration of validation therapy.
9. To find out the association between the demographic, clinical variables and the level of cognition before and after validation therapy in control group of old age people.
10. To find out the association between the demographic, clinical variables and the level of cognition before and after validation therapy in experimental group of old age people.

Operational Definitions

Effectiveness

In this study it refers to increase in the level of cognition as measured by mini mental status examination after conducting the validation therapy of old age people.

Validation therapy

In this study it refers to the planned psychological interventions using various methods such as group discussions, and by using verbal techniques and non-verbal techniques. It is administered by the researcher each day 1 hour in the morning for 5 days in a week.

Verbal techniques

Centering

In this study it refers to focus on a spot about two inches below your waist, inhale deeply through your nose, filling your body with air. Exhale through your mouth. Repeat this procedure slowly, eight times.

Reminiscing

In this study it refers to explore the past by using loving clear low tone of voice, re-establishing familiar coping methods that the old age people can tap to survive present day, losses (spouse, children and duration of stay in the old age home).

Non-verbal techniques

In this study it refers that maintaining genuine close eye contact, linking the behaviour with unmet needs, touching, using music to enhance the old age people to communicate and to improve the level of cognition.

Cognition

In this study it refers to an ability of higher mental functions such as orientation, recall, attention, delayed verbal recall, reading, writing and copying by old aged as measured by Mini Mental Status examination.

Old age people

In this study it refers to the elderly people aged between 60-75 years residing at old age home.

Old age home

In this study it refers to the place where the old age people live away from their home with all necessary facilities of daily living.

Assumptions

- Each person is unique and deserves respect regardless of age or disorientation.
- Aging will have changes in all the dimensions physical, psychological, social, emotional and behavioural aspects.
- Psychological therapies are required during old age for better adjustment in their daily life.
- Mental readiness is needed for adaptation of various problems in old age.
- Human beings can change and grow in a genuine and loving relationship.

Null Hypotheses

The null hypotheses stated are:

- H₀₁** There will be no significant difference in the level of cognition before and after validation therapy between control and experimental group of old age people.
- H₀₂** There will be no significant association between the selected demographic, clinical variables and level of cognition before and after validation therapy in control group of old age people.
- H₀₃** There will be no significant association between the selected demographic, clinical variables and level of cognition before and after validation therapy in experimental group of old age people.

Delimitations

- The study was limited to old age people who had major memory impairment, delayed verbal recall and the age above 75 years.
- The study was limited to old age people who were at Sree Seva Mandhir old age home at the time of data collection.
- The study period was limited to 6 weeks duration.

Conceptual Framework of the Study

The conceptual framework for research study presents the reasoning on which the purposes of the proposed study are based. The conceptual framework deals with inter-related concepts that are assessable together in some rational schemes by virtue of this relevance to a common theme. (Polit & Beck, 2004).

In the mental health field, a number of proponents have put forward various theories. These theoretical frameworks throw light on to the basic principles on which the life style practices need to be based for an effective healthful living and also when there is a failure, how the entire homeostasis is affected. Keeping these views in mind, an attempt has been made to conceptualize, how an individual with cognitive decline may internalize cognitive impairment and experience diminished self-esteem and self-efficacy leading to limited prospects for recovery.

Cognitive impairment

Affects the ability to think, concentrate, formulate ideas, reason and remember.

Cognition

Mental operations that relate to logic, awareness, intellect, memory, language, and reasoning powers.

Memory

It is the ability of an organism to store, retain, and recall information and experiences.

Group identification

Individuals who belong to inclusion criteria aimed the validation therapy effects on cognition are mediated by stereotype awareness, agreement, and self-concurrence.

Stereotype awareness

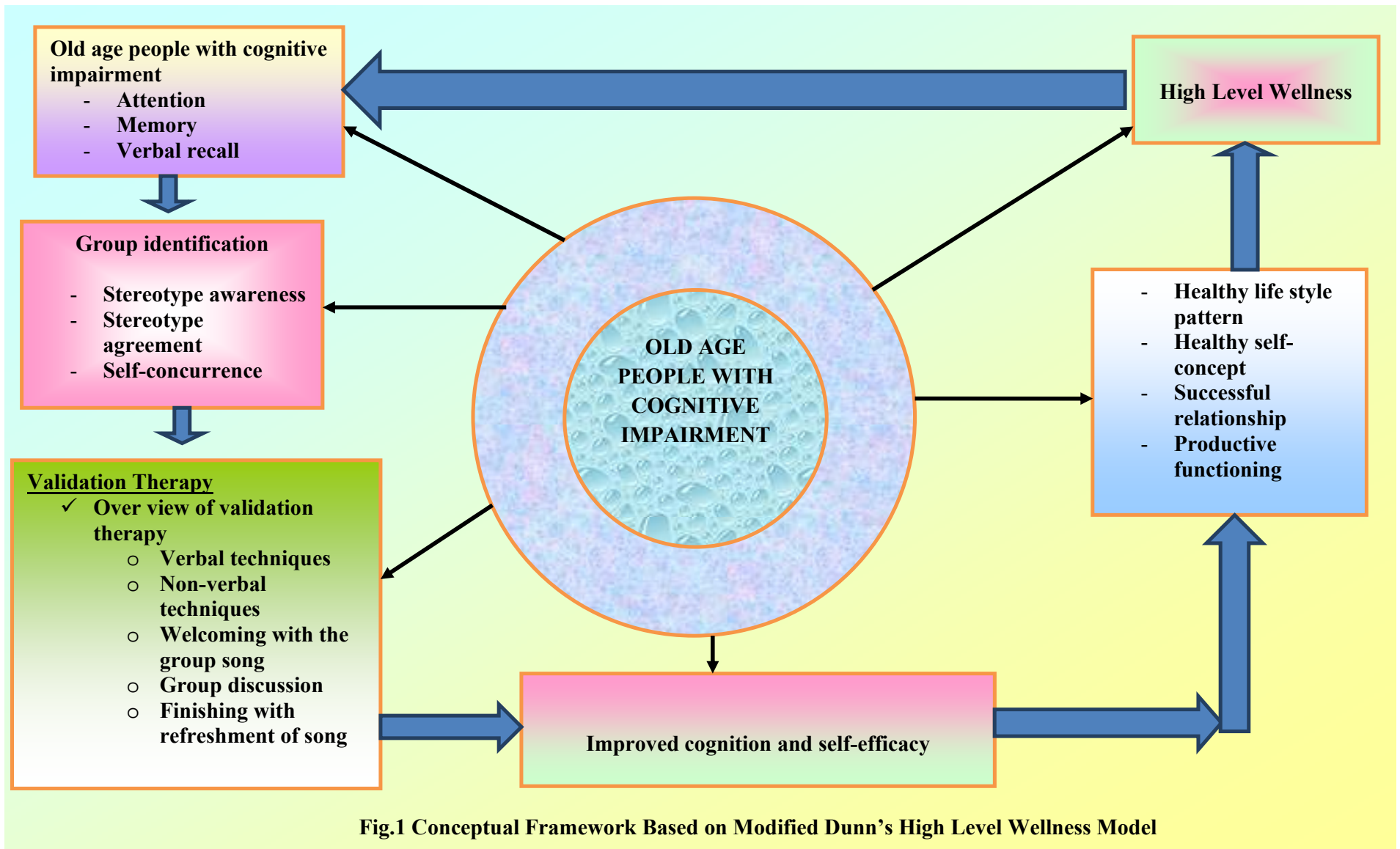
Knowledge structures that are learned by most members of the group. When the old age people become aware of their awareness it is stated as stereotype awareness.

Stereotype Agreement

When individuals face the onset of cognitive problem, these stereotypes become relevant to the self.

Self-concurrence

It occurs when an individual applies the culturally internalized beliefs to himself or herself.



Projected Outcome

The study will improve the cognition among old age, in turn to do their work effectively and to cope up with their daily stresses and to improve the quality of life.

Summary

This chapter has dealt with the back ground, need for the study, and statement of the problem, objectives, operational definitions, assumptions, null hypotheses, delimitations and conceptual framework.

Organization of the Report

Further aspects of the study are presented in the following five chapters.

In Chapter – II : Review of literature

In Chapter – III : Research methodology – which includes research approach, design, setting, population, sample and sampling techniques, tool description, content validity and reliability of tools, pilot study, data collection procedure and plan for data analysis.

In Chapter – IV : Analysis and interpretation of data

In Chapter – V : Discussion

In Chapter – VI : Summary, conclusion, implications, recommendations and limitations.

Chapter II
Review of literature

CHAPTER II

REVIEW OF LITERATURE

A literature review is an organized written presentation of what has been published on a topic by scholars (Burns & Grove, 2004).

The task of reviewing literature involves the identification, selection, critical analysis and reporting of existing information on the topic of interest. This chapter deals with a review of published studies, unpublished research studies and from related material for the present study. The review helped the researcher in building the foundations of the study.

The review of literature is presented under the following headings.

- **Literature related to old age**
- **Literature related to cognition**
- **Literature related to cognition in old age**
- **Literature related to validation therapy**
- **Literature related to effect of validation therapy on cognition in old age**

Literature related to old age

A study shows that the ability to encode new memories of events or facts and working memory shows decline in both cross-sectional and longitudinal studies with the samples of 200. Random sampling technique was used in these studies. Studies comparing the effects of aging on episodic memory, semantic memory, short-term memory and priming find that episodic memory is especially impaired in normal aging.

These deficits may be related to impairments seen in the ability to refresh recently processed information. In addition, even when equated in memory for a particular item or fact, older adults tend to be worse at remembering the source of their information, a deficit that may be related to declines in the ability to bind information together in memory.”(Hedden & Gabrieli, 2004)

In the year (1988) Scanzoni & Scanzoni, has done Research in the United Kingdom and the United States has found that the older a person is in a chronological sense, the later is the chronological age at which that person tends to think old age begins. The concept of old age also is affected by social stratum: lower-status persons, as an example tend to think that old age begins in the fifties, while higher-status persons tend to think that old age begins around age 65. 156 samples was taken for the study by using purposive sampling technique. Advances in medical science and technology have led to increased life spans for an increasing proportion of the population; however, social development has not kept pace. Thus, many among the growing numbers of older people lead increasingly less rewarding lives. Further, the increasing numbers of persons in the population aged 65 or older demand that research into aging develop methods that address the differences among age groupings within the 65 and over classification.

Wober and Gunter’s (1982) project was intended to solicit public opinion in London regarding the image of old age on British television programs. The authors mailed out questionnaires and viewing diaries to participants in the London ITV region, asking them to view one week’s worth of programming, complete the dairies and questionnaires, and return them. Of the 339 respondents, categories were developed

regarding age, gender, race, and socio-economic class. 100 samples were taken and the researchers used quota sampling technique. Results indicated that British viewers did not see misrepresentation nor negative imaging of the old age in programming. The researchers did notice, however, that viewers felt the image of old age in fictional programs (comedies and action/ adventure shows) was less respectful than that seen in news, documentaries and game shows. Overall, the authors stated that conclusions published by Gerber and Aronoff in the U.S. were not supported in Britain.

Literature related to cognition

An intervention study aims to prevent cognitive impairment, dementia and disability in 60-77 year old persons at an increased dementia risk. 300 samples were taken. The researchers used purposive sampling technique. The 2-year multi-domain life-style intervention includes nutritional guidance, exercise, cognitive training, increased social activity, and intensive monitoring and management of metabolic and vascular risk factors. The primary outcome is cognitive impairment measured by a sensitive Neuropsychological Test Battery (NTB), and Stroop and Trail Making tests to capture early cognitive impairment typical for both Alzheimer's disease and vascular dementia. We hypothesize that the multi-domain intervention will reduce cognitive impairment in the study group compared to the control group during the initial 2-year intervention period and reduce dementia incidence after the 7-year extended follow-up. Helsinki, et al. (2010)

Brenda Plassman, (2008) an associate research professor of medical psychology at Duke University, and colleagues included 856 persons aged 71 or older drawn from a

nationally representative sample. Purposive sampling technique was used. Subjects provided a clinical and medical history, were examined neurologically, and underwent neuropsychological tests. The researchers then analyzed the results to determine how many of the subjects had normal cognition, how many had cognitive impairment that did not reach the threshold for dementia, and how many dementias had. Out of the 856 subjects, 241 had impaired cognition without dementia. Population sampling rates were derived to adjust for at least some of the potential bias due to nonresponse among subjects and attrition. The investigators used their findings about the subjects with impaired cognition without dementia to compute a national prevalence estimate for the condition. They found that 22 percent of Americans aged 70 or older—that is, 5.4 million as of 2002—had it. As Plassman told *Psychiatric News*, “The finding that 22 percent over age 70 have mild cognitive problems is sobering—and clearly illustrates the importance of this problem in late life.”

In the year (2002) Charles, H. Hillman studies show that examines the relationship of energy consumption, storage, and expenditure to cognition and scholastic performance. 350 samples was selected and random sampling technique was used in this study. Specifically, the literature base on nutrient intake, body mass and physical activity is described relative to cognitive development and academic achievement. The review of literature regarding the over consumption of energy and excess body mass suggests poorer academic achievement during development and greater decay of brain structure and function accompanied by increased cognitive aging during older adulthood. The review of literature regarding energy expenditure through the adoption of increased physical activity participation suggests increased cognitive health and

function. Although this area of study is in its infancy, the preliminary data are promising and matched with the declining physical health of industrialized nations; this area of science could provide insight aimed at improving brain health and cognitive function across the human lifespan.

Cournot, et al. (1999) prospective research design over a 5-yr period to assess the relation of BMI to cognitive function and decline in healthy 32- to 62-yr-old men and women in the workforce in United States. 50 samples were taken and simple random sampling technique was used. Along with BMI, cognitive tests of attention, learning, and memory were conducted and the results indicated that higher BMI was associated with poorer cognitive performance after adjusting for demographic and psychosocial variables (i.e. age, sex, education, health status). Additionally, higher BMI at baseline was predictive of greater cognitive decline during the 5-yr follow-up, indicating that BMI is independently associated with cognitive function during adulthood.

In the year (1989), recent study findings using a variety of experimental techniques have indicated that cognitive performance declines with decreases in physical activity and aerobic fitness and increases in body mass and energy consumption. Several recent studies have demonstrated that these factors influence cognition not only on a rudimentary level but also at the level of scholastic performance. The remainder of this article focuses on the relationship of these factors to cognitive health in youth (although relevant adult data will be discussed to provide support), with an emphasis on scholastic achievement and performance.

A prospective cohort study of Japanese Americans living in King County, WA, study (n = 1985) cognitive states were defined as the errors in the Cognitive Abilities Screening Instrument score. Transition probabilities were modelled by the use of a modified Poisson distribution with the Poisson mean and mortality dependent on the cognitive state and covariates. 586 samples were selected and simple random sampling technique was used. During an 8-year follow-up, 21.5% died (95% confidence interval [95% CI], 19.3-23.7), 26.6% experienced cognitive decline (95% CI, 24.2-29.1), and 51.9% remained stable or improved cognitively (95% CI, 49.2-54.6). In multivariable analyses, improvements were notably more likely to occur among younger, more-educated people and in women. Older age, male sex, and less education were each significantly related to mortality. Mitinski, et al. (1985)

Literature related to cognition in old age

In the year 1999 Arthur F. Kramer and Kirk I. Erickson, provide a brief review of the literature on exercise effects on brain and cognition. To this end, we focus on both prospective and retrospective human epidemiological studies that have examined the influence of exercise and physical activity on cognition and dementia. We then examine the relatively small set of human randomized clinical trials that have, for the most part, focused on exercise training effects on cognition. Next, we discuss animal research that has examined the molecular, cellular, and behavioural effects of exercise training. Finally, we conclude with a summary and brief discussion of important future directions of research on fitness cognition and brain.

A study shows that in this case, 1,740 men and women over the age of 65 yr, without cognitive impairment were asked to report the number of times per week that they performed different physical activities (i.e., walking, hiking, bicycling, aerobics or calisthenics, swimming, water aerobics, or weight training) for at least 15 min per time over the past year. A number of potential confounding factors, including self-reported health, a variety of medical conditions, lifestyle factors such as smoking and drinking, and demographic factors, were also recorded at the initial assessment. An assessment of genetic risk for Alzheimer's disease [one or more e4 alleles on the apolipoprotein E (apoe) gene] was also done at this time. After an average follow-up period of 6.2 yr, 158 individuals had developed Alzheimer's dementia. Alzheimer's disease is the most common type of dementia and negatively affects a variety of cognitive and neurological processes. After adjustment for the covariates obtained at the initial assessment the incidence rate for Alzheimer's disease was significantly higher for individuals who exercised fewer than three times per week (19.7 per 1,000 person yr) compared with those who exercised more than three times per week (13.0 per 1,000 person yr). These results were not influenced by a genetic predisposition for Alzheimer's disease (i.e., one or more e4 alleles on the apoe gene). However, the risk reduction for Alzheimer's disease was greater for those participants who initially had the poorest physical performance (e.g., on tests such as a 10-ft timed walk, which assesses the speed that a person can walk 10 ft, and is considered a proxy of physical fitness, balance test, etc.). Larson, et al. (1978).

In the year (1976) Baltes, et al. according to the contextual world view, change is the result of the interaction between ontogenetic, evolutionary, and social change

conditions. Therefore, cognitive change in old age is described as multidirectional (Baltes and Schaie, 1976, 1977; Nesselroade & Baltes, 1974). This can be viewed two ways. First, change can occur in different directions for different cognitive dimensions. 76 samples were taken for the study by using purposive sampling technique. For example, crystallized intelligence is thought to increase with age (Horn, 1970; Horn & Donaldson, 1976). Secondly, change can be multidirectional for a single dimension. The intervention work of Hartley, Harker, and Walsh (1980) and Fozard (1980) provide examples of such multidirectional change. Harley et al. (1980) found that performance on memory tasks could be improved following decline through the training of encoding strategies. Fozard (1980) also demonstrated improved memory performance through the use of task redesign and training. Thus, these interventions lead to an improvement following a decline in memory performance. Therefore, cognitive change can be multidirectional.

Baltes and Schaie (1976) propose that cognitive changes associated with old age are not fixed and irreversible. Rather, they support the notion of plasticity with respect to cognitive abilities in old age. Concomitant with this theoretical position is the promotion of intervention techniques. For example, Baltes and Labouvie (1973) advocate for the conduction of experimental, intervention research with respect to cognitive ability and old age. Subsequent research has supported the notion of plasticity with intervention leading to a gain in cognitive abilities performance (Birkhill & Schaie, 1975; Fozard, 1980; Hartley, et al. 1980). Therefore, evidence is beginning to appear in the literature that supports the notion of cognitive plasticity in old age.

Literature related to validation therapy

In 1993, Scan land and Emershaw conducted a Quasi-experimental study to determine the effect of reality orientation and validation therapy upon the functional status, cognitive status and level of depression in confused older adults. The sample size of 34 was divided into two groups and then subdivided utilizing a non-equivalent control group design. Simple random sampling technique was used in this study design.

Miesen, (1992) study shows that validation techniques are often applied in a group setting, but can be used effectively on a one to one basis. Even a few minutes several times a week is to be worthwhile input; as with other communication based approaches, much can be achieved during routine care giving, although it may well be demanding work in its own right. Music is used as a unity activity and every effort is made to minimize communication difficulties. Group members are encouraged to take on responsibilities with in the group – song- leader, welcome, giving out refreshments and so on.

A pilot study was conducted with five dementia patient's to assess the effectiveness of validation therapy in a group setting upon communication, mood and behaviour. The study took place over period of 40 weeks with comparison of validation therapy and reminiscence therapy. Measurements were obtained: a) upon entry to the study, b) at the end of a non-interventional 10-week period, prior to initiation of validation therapy) at the end of the first 10weeks of validation therapy and again in 10 weeks following completion of validation therapy, prior to reminiscence therapy; and d)at the end of 10 weeks of reminiscence therapy. Two of the subjects demonstrated

improvement in social interaction during the period of validation therapy and subsequent decline during reminiscence therapy (Morton and Bleathman, 1991).

In the year 1988 Babins, Dillion, and Merovitz has studied the effect of VT with subjects in stage two, time confusion, and stage three, repetitive motion, of disorientation. They stated Feil had previously reported individuals in these stages appear to benefit more from VT than Reality Orientation. Cognitive, social and behavioural measures were studied. The samples of 12 subjects were divided into a VT group of five and a no-treatment control group of seven. Therapy was conducted for a total of 22 sessions over an 11-week period. Findings were reported by comparing the sum of the scores in the first three sessions to the sum of the scores of the last three sessions. Comparisons between the sum of the first three sessions and last three sessions of the VT group were reported to demonstrate an increase in verbal and non-verbal expression. An increase in irritability scores from 55 to 63 on normalized t-scores was reported. The results must be interpreted carefully since not all of the scales utilized had been standardized.

Marliyn (1987) study was designed to determine if validation therapy would result in decreased confusion, higher morale and a higher level of behavioural functioning when compared to reality orientation. The research was conducted at B'NaiB'Rith Nursing Home in Memphis, Tennessee. Following a selection process and pre testing to control for level of disorientation, fourteen subjects experiencing a moderate degree of confusion were assigned to treatment with reality orientation or validation therapy. Sessions were implemented three times a week for thirty to forty minutes over a six week period. Subjects were post tested on the same measures

following treatment. Nonparametric statistical analysis was accomplished with the Wilcoxon Two-Sample Test at the .05 level of significance for a one-tailed test. Major findings indicated that participants in the reality orientation group showed significant improvement in orientation but not in morale or behavioural functioning. There was no significant improvement in morale, behavioural functioning or orientation for the subjects in the validation therapy group. It is recommended that similar studies continue to be replicated despite methodological problems in order to build a substantial body of knowledge from which treatment programs can be justified.

Robb, Stegman, and Wolanin (1986) was conducted the first experimentally designed study to test VT. The purpose of the study was to ascertain the effect of VT on mental status, morale, and social behaviour of cognitively impaired older adults. The findings of the single pre- and post-test measurements were non-significant for all three variables. However, anecdotal information reported some subjects did demonstrate changes in social behaviours, including an increase in demanding behaviour. By the conclusion of the study, the researchers had identified several design problems and reported the results to be severely compromised. Other problems identified include failure to conduct a pilot study, instrumentation problems, attrition of subjects, and difficulty of obtaining informed consent in this patient population. Robb and colleagues (1986) published the findings of their study to provide essential information for possible replication regarding ways to improve study design. The research also provided insight into the difficulty of conducting experimental research in long-term care facilities.

The first article proposing the use of VT as an alternative to Reality Orientation appeared in 1967 (Feil, 1967). In 1972, Feil conducted research to measure the response

in a VT group. She reported the results in 1992 and noted improvement in "gait, speech, and nonverbal communication." Furthermore she states, "The study group cried less and paced less, resulting in less need for restraints." However the research methods and data to substantiate the above claims have never been published. In 1983, the Validation Training Institute was founded. After this time, several articles based primarily on clinical experiences and impressions began to appear in the literature these articles stressed pursuing communication without attempting reality orientation. Scenarios were given to demonstrate the manner in which validation therapy could be utilized in clinical practice. (Feil, et al. 1988).

Literature related to effect of validation therapy on cognition in old age

Woods (2005), again notwithstanding caveats about data quality, suggests that the available data shows stronger evidence for the positive impact of reminiscence therapy on mood/behaviour, cognitive strength and relationships. However, the review also suggests that there is a diversity of practice within reminiscence therapy and the data does not allow for a more nuanced understanding of which elements/aspects of these practices have greater (or lesser) positive impacts on the participants. One of the interesting points that the authors make is about the nature or type of memories that these sessions evoke – they suggest that the memories / stories told in the sessions are those which have already been well rehearsed (over the course of a person's life path?). They also suggest that if the memories evoked are consistently of the very distant past then this might create some cognitive issues when the person is confronted by the dissonance between the re-experienced memories and the current state of their life without there being a coherent personal narrative that links the 2.

There have been relatively few empirical studies assessing the efficacy of the validation approach, as noted by Feil (1967), Mitchell (1987) and Hitch (1994). Hitch noted that validation therapy promotes contentment, results in less negative affect and behavioural disturbance, produces positive effects and provides the individual with insight into external reality. It was, however, suggested that therapists could become too focused on confused communication and could fail to identify simple explanations such as pain or hunger. Neal & Briggs (2002) evaluated validation therapy across a number of controlled trials, employing cognitive and behavioural measures. They concluded that despite some positive indicators, the jury was still out with respect to its efficacy. (Briggs, 2002).

Fine and Rouse Bane (1995) a Quasi-experimental time series design study was conducted to determine the effects of validation therapy approaches on cognitively impaired nursing home residents and their caregivers. This is the first study conducted outside of a group therapy setting and provided consistent application of validation therapy techniques for a long period of time. They incorporated the recommendations of Babins and colleagues (1988) by linking specific validation techniques to specific stages of disorientation. The most significant research finding indicated that problem behaviours were effectively decreased 73% when the communication technique for the specific confusional stage was utilized.

In the year 1988 Barton & Wright note that validation therapy (VT) is not theoretically grounded but makes appeal to theory to justify the approaches it takes. (This tallies well with the document from the VTI, although there is one sentence in the

VTI document that hints at a harried and paranoid author justifying their work to sceptical “scientists and academics”.) Notwithstanding the aforementioned caveat, they found that the data does not show statistically significant therapeutic differences that can be attributed to the particular nature of validation therapy. What is interesting is that they highlight the common ground that validation therapy shares with other humanistic / person-centred therapeutic techniques.

Validation therapy was developed as an antidote to the perceived lack of efficacy of reality orientation. It was suggested by its originator, Naomi Feil that some of the features associated with dementia such as repetition and retreating into the past were in fact active strategies on the part of the affected individual to avoid stress, boredom and loneliness. She argues that people with dementia can retreat into an inner reality based on feelings rather than intellect, as they find the present reality too painful. Validation therapy therapists therefore attempt to communicate with individuals with dementia by empathising with the feelings and meanings hidden behind their confused speech and behaviour. It is the emotional content of what is being said that is more important than the person’s orientation to the present. There have been relatively few empirical studies assessing the efficacy of the validation approach. Hitch noted that validation therapy promotes contentment, results in less negative affect and behavioural disturbance, produces positive effects and provides the individual with insight into external reality. It was, however, suggested that therapists could become too focused on confused communication and could fail to identify simple explanations such as pain or hunger. Neal & Briggs (2002) evaluated validation therapy across a number of controlled trials, employing cognitive and behavioural measures. They concluded that

despite some positive indicators, the jury was still out with respect to its efficacy.
(Mitchell, et al. 1987)

In the year 1972 Feil studies states that validation techniques are used in the groups, 5 to 10 members are selected with cognitive impairment. Each group has a rigid format, beginning with the welcoming of members and the singing of a group song, followed by group discussions of a topic regarding happiness, fear, separation or loss and finishing with the thanking of members, a closing song and refreshments. She found that the old age people has improved speech, less negative affect (crying , hitting); more positive affect (smiling , talking , helping others); people become aware of their external reality ; they talked outside of group meetings.

Summary

This chapter has dealt with the review of literature related to the problem stated. The literatures here were extracted from 23 primary and 10 secondary sources. It has helped the researcher to understand the impact of the problem of the study. It has enabled the investigator to design the study, develop the tool, and plan the data collection procedure and to analyse the data.

Chapter III
Research Methodology

CHAPTER III

RESEARCH METHODOLOGY

The methodology of research study is defined as the way the information is gathered in order to answer the research question or to analyse the research problem.

The present study was conducted to assess the effectiveness of validation therapy on cognition among old age people, at selected old age home in Chennai. This chapter deals in brief on different steps undertaken by the investigator of the study. It involves research approach, the setting, population, sample, sampling technique, selection of tool, content validity, reliability, pilot study, data collection procedure and plan for data analysis.

Research Approach

Research approach is the most significant part of any research. The appropriate choice of the research approach depends on the purpose of the research study which is undertaken. To accomplish the objective of the study, an experimental approach was considered most appropriate as the researcher wanted to assess the effectiveness of validation therapy on cognition.

Research Design

A research design is the most important methodological design that a researcher works in conducting a research study. According to Polit and Hungler (1999), quasi experimental research is an experimental design with a goal to assess the effectiveness

of a therapy, where randomization procedures are not used to control the extraneous variables.

Quasi experimental research design

$$O_1 - O_2$$
$$O_1 \quad X \quad O_2$$

O₁- Assessment of level of cognition before validation therapy

O₂- Assessment of level of cognition after validation therapy

X- Validation therapy

Validation Therapy

It refers to the planned psychological interventions for group of old age people using various methods such as group discussions, and by using verbal techniques such as centering : Focus on a spot about two inches below your waist ,inhale deeply through your nose, filling your body with air. Exhale through your mouth. Repeat this procedure slowly, eight times. Reminiscing: Exploring the past by using a clear loving tone of voice, re-establishing familiar coping methods that the disoriented person can tap to survive present day, losses. Non-verbal techniques such as maintaining genuine close eye contact, linking the behaviour with unmet needs, touching, using music to enhance the old age people to communicate and to improve the level of cognition. It is administered by the researcher on each day 1 hour in the morning for 5 days in a week.

In this technique 5 to 10 members are belongs to each group. For each group 1 hour the therapy was given. Each group has a rigid format, beginning with the welcoming of members and the singing of a song, followed by discussion of a topic

regarding anger, separation or loss and finishing with a thanking of members, a closing song and refreshments.

Programme schedule:

Session 1: Overview of validation therapy (10mts)

Session 2: welcoming with group song (5 mts)

Session 3: Validation therapy (verbal techniques) – activity (15 mts)

Session 4: Validation therapy (non- verbal techniques) _ activity (15 mts)

Session 5: Group discussion (10mts)

Session 6: Finishing with the refreshment of song (5mts)

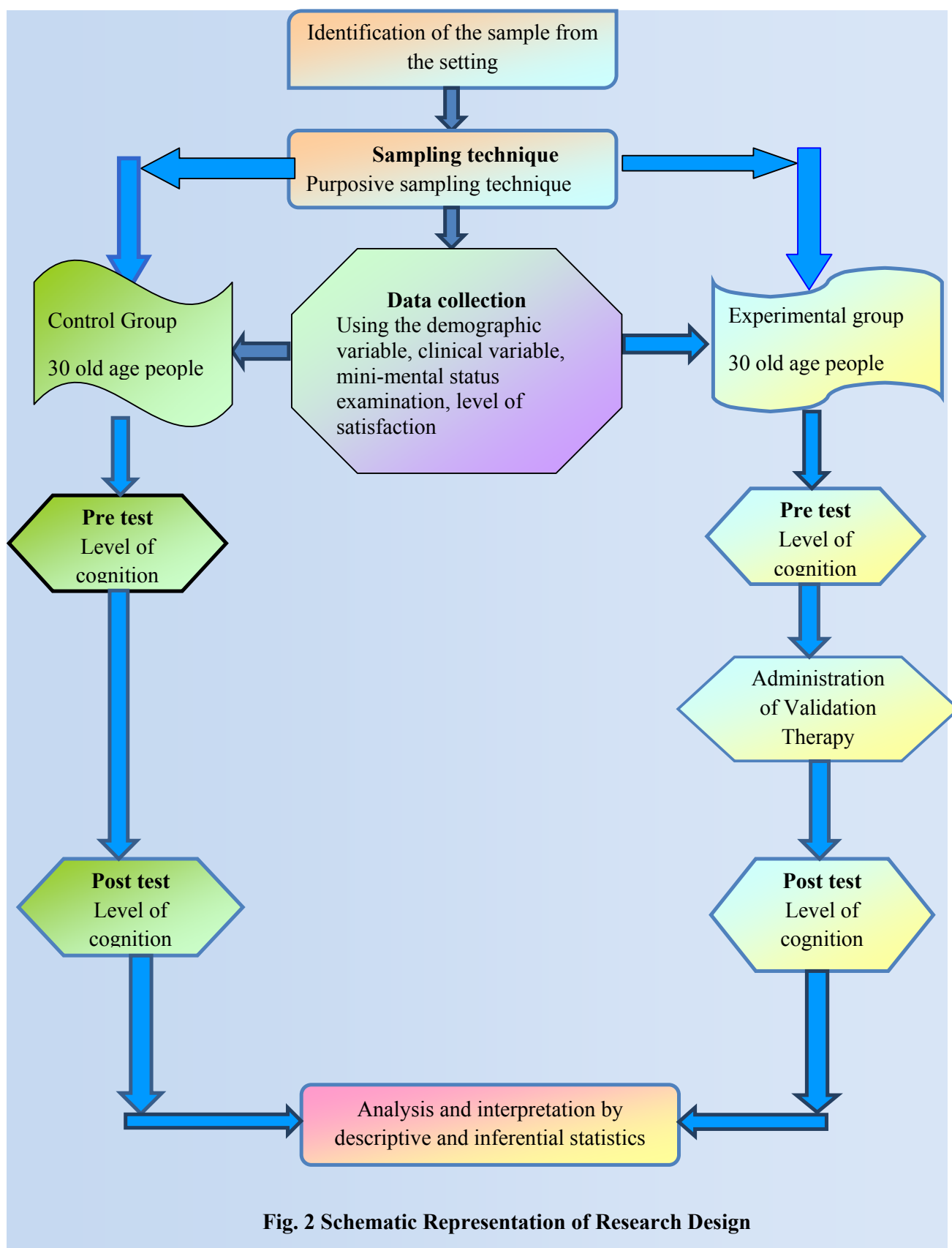


Fig. 2 Schematic Representation of Research Design

Variables

Dependent variables

The variable hypothesized to depend on or to be caused by another variable. In this study dependent variable is Level of Cognition.

Independent variables

The variable hypothesized to the outcome variable of interest. In this study independent variable is Validation Therapy.

Attribute variables

A variable that confound the relationship between the independent and dependent variable that need to be controlled either in the research design or through statistical procedure. (Polit & Beck, 2005). Demographic variable and clinical variable is the other variable in this study used by the researcher.

Research Setting

Settings are the most specific places where data collection will occur (Polit & Beck 2006). The present study was conducted at Sree Seva Mandhir old age home, Virugambakkam, Chennai. It is located about 5kms from koyambedu bus station. It is located about 10kms from Apollo College of nursing. It is a 75 bedded home, with 25 beds for males and 50 bedded for females. They have a daily schedule of activities starting from morning prayer, breakfast, therapy sessions followed by lunch and a period of rest and watching television, dinner and bedtime. There was a full time nurse working from morning to evening shifts.

Population

Population is the entire aggregation of cases which meet designated set of criteria. (Polit & Beck 2004). The **target population** is the group of population that the researcher aims to study and to whom the study findings will be generalized. In this study, the target population comprises of all the old age people who satisfy the inclusion criteria at Sree Seva Mandhir, Virugambakkam, Chennai.

The **accessible population** is the list of population that the researcher finds in the study area. The accessible population in this study the old age people who satisfy the inclusion criteria.

Population of this study includes old age people aged between 60 to 75 years.

Sample

Polit and Beck (2004) said that a sample consists of the subset of the units that comprises the population. A sample of 30 old age people who satisfy the eligibility criteria in Sree Seva Mandhir, Virugambakkam, Chennai, were selected for the study.

Sample Size

Sample size of the study is 60. (30 samples in experimental group and 30 samples in control group).

Sampling Technique

Sampling is the process of selecting a portion of population to represent the entire population (Polit & Beck, 2006). Purposive sampling technique in which the

researcher selects participants based on personal judgement about which ones will be more informative, was used for the study. The researcher used purposive sampling technique and Old age home at Virugambakkam was selected as experimental place.

Sampling Criteria

Inclusion criteria

The study will include old age people:

- Old age people who are aged between 60 years to 75 years
- Old age people who are willing to participate in the study.
- Old age people who can read and follow English or Tamil from the investigator.

Exclusion criteria

- Old age people were not willing to participate.
- Old age people who are having problems such as:
 - ❖ Visual and hearing problem
 - ❖ Communication problem
 - ❖ Memory problem
 - ❖ Taking any medications

Selection and Development of the Study Instruments

As the study was aimed at evaluating the effectiveness of validation therapy upon the level of cognition of old age people. The data collection instruments were developed and chosen through an extensive review of literature in consultation with experts and with the opinion of faculty of members. The instruments used in the study were Demographic variable proforma, Clinical variable proforma, Mini-mental status

examination by Folstein et al. and Rating scale on the level of satisfaction after the validation therapy.

Demographic variable proforma of old age people

The demographic variable proforma consisted of age, gender, educational status, marital status, source of income, monthly income, number of children, religion, type of family and duration of stay in the old age home.

Clinical variable proforma of old age people

The clinical variable proforma consisted of any medical illness, duration of medical illness, history of taking medications for major illness, history of hospitalization, treatment seeking behavior for any illness, history of smoking, history of alcoholism and the relaxation therapy underwent by the old age people.

Mini-mental status examination

This is a standardized tool to assess the cognition level developed by Folstein et al. It consists of Orientation, Immediate recall, Delayed verbal recall, Attention, Naming, Repetition, Stage command, Reading, Writing and Copying etc. It is a reliable test. Total score is 30.

Scoring Interpretation

Score	Percentage	Level of satisfaction
24-30	Above 75%	Highly satisfied
18-23	51-75%	Satisfied
10-17	25- 50%	Dissatisfied
0-9	Below 25%	Highly dissatisfied

Rating scale on level of satisfaction of validation therapy in experimental group of old age people

This is developed by the investigator to assess the satisfaction of validation therapy among old age people. This is a 4 point scale ranging from 4-1 (highly satisfied, satisfied, dissatisfied, highly dissatisfied). It consists of questions related to the researcher (1, 2, 3) and questions related to validation therapy (4, 5, 6, 7, 8, 9, 10). Thus the total obtainable score is 30 – 100.

Scoring key

Score	Percentage	Level of satisfaction
Above 30	Above 75%	Highly satisfied
21-30	51-75%	Satisfied
10-20	25- 50%	Dissatisfied
Below 10	Below 25%	Highly dissatisfied

Psychometric properties of the Study Instruments

Validity

The content validity refers to the degree to which the item on an instrument adequately represents the universe of the content (Polit & Beck, 2004). The Mini-Mental status examination by Folstein et al is a standardized tool and permission was obtained from the author to use it. The other proformas and scales were certified and validated by seven experts. The modifications and suggestions of experts were incorporated in the final preparation of the tool.

Reliability

Reliability refers to the accuracy and consistency of measuring tool. The Mini-Mental status examination by Folstein et al is a standardized tool. The reliability of the tool was determined by the authors using test-retest method and the k-score was found to be 0.71, indicating that the tool is highly reliable. The level of satisfaction scale was tested using split half method and the reliability was found to be 0.8, indicating that the tool.

Selection and Development of Interventions

It refers to the planned psychological interventions for group of old age people using various methods such as group discussions, and by using verbal techniques such as centering : Focus on a spot about two inches below your waist ,inhale deeply through your nose, filling your body with air. Exhale through your mouth. Repeat this procedure slowly, eight times. Reminiscing: Exploring the past can re-establish familiar coping methods that the disoriented person can tap to survive present day, losses. Non-verbal techniques such as maintaining genuine, close eye contact, using a clear, low loving tone of voice, linking the behaviour with unmet needs, touching, using music to enhance the old age people to communicate and to improve the level of cognition. It is administered by the researcher on each day for 5 days for 1 hour from 9.30am to 12.30pm.

In this technique 5 to 10 members are belongs to each group. For each group 1 hour the therapy was given. Each group has a rigid format, beginning with the welcoming of members and the singing of a group song, followed by discussion of a

topic regarding anger, separation or loss and finishing with a thanking of members, a closing song and refreshments.

Validation Therapy

Session 1 : Overview of validation therapy (10 mts)

Objective : Participants will be able to explain the phases of the therapy, verbal techniques and non-verbal techniques of the therapy.

Activity : Group discussion and clarification of doubts

Session 2 : Welcoming with group song (5 mts)

Objective : Participants are interested to sing songs especially old cinema songs and devotional songs.

Activity

- Participants plan daily and they will sing a song.
- Participants discuss among each other and finally they will decide to sing a song on each day.
- Participants are encouraged to sing a song.
- Participants feel relaxed while singing.
- Participants sing mostly devotional songs.

Session 3 : Activities related to verbal techniques (15 mts)

Objective : Participants become aware of their problems, weakness and communication pattern.

Activity

- Participants are encouraged to ventilate their feelings.
- Participants expressed their feelings verbally and non-verbally.
- Participants expressed their past stressful situations and events in their life.
- Participants are encouraged to use the coping mechanisms.

Session 4: Activities related to non-verbal techniques (15 mts)

Objective: Participants are physically involved in doing the activities for further improvement in daily living.

Activity

- Participants are encouraged to do the centering (breathing exercise).
- Participants should do this exercise 8 times.
- Participants maintained eye to eye contact.
- Participants feel happy by using low and clear voice with lovable talk

Session 5 : Group discussion (10 mts)

Objective : Participants will be able to explain their opinions and concepts regarding the topic related to their life in old age.

Activity

- Participants expressed their views about the topic happiness.
- Participants expressed their views about the topic sadness.
- Participants expressed their views about the topic loss.
- Participants expressed their views about the topic separation.
- Participants expressed their views about the topic stressful events in their life.

Session 6 : Finishing with refreshment of song (5 mts)

Objective : Participants are interested to sing songs especially old cinema songs and devotional songs at the end for their refreshment to forget their stressful matters.

Activity

- Participants plan daily and they will sing a song.
- Participants discuss among each other and finally they will decide to sing a song on each day.
- Participants are encouraged to sing a song.
- Participants feel relaxed while singing.
- Participants sing mostly devotional songs.

Pilot Study

Polit & Beck (2004) stated that a pilot study is a miniature version of actual study in which the instruments are administered to the client's drawn from the same population. The purpose is to find out the feasibility and practicability of the study design. A Pilot study was conducted among five old age people who satisfied the eligibility criteria at Sahaya illam, St. Thomas mount, Chennai. The client was chosen by purposive sampling and validation therapy was conducted for five days. It was found that the selected tools was practicable to use and understandable by the old age people with some assistance. It was also found that it would be feasible to conduct the study in the research setting.

Protection of Human Rights

- The study was conducted after the approval of ethical committee of Apollo Hospitals, Chennai.

- Obtained permission from Principal, Apollo College of Nursing and Head of the department of Psychiatric Nursing and Director of Sree Seva Mandhir old age home where the study was conducted.
- Written consent was obtained from the participants.
- Confidentiality of the data was maintained throughout the study.

Data Collection Procedure

Data collection is the gathering of information needed to address a research problem. The study was conducted at Sree Seva Mandhir old age home. The researcher has chosen the old age people by identifying them through personal interaction.

The researcher introduces herself and obtained consent from the old age people to participate in the study after giving assurance regarding confidentiality. The data collection was done for a period of 6 weeks. The researcher collected data from the old age people by interview method using structured questionnaire. Through extensive review of literature, Samples are divided into three groups. Each group has 5 to 10 individuals and the therapy was given 1 hour for each group. Validation therapy was given for about 1 hour every day for 5 days in the morning from 9.30 am to 12.30 pm. Post test was conducted among the old age people after 30 days by using the same tools. Level of satisfaction of old age people regarding the validation therapy was assessed by using level of satisfaction rating scale.

Problems faced during Data Collection

Since the authorities and the old age people were very co-operative, researcher did not find any difficulties during data collection.

Plan for Data Analysis

Data analysis is the systemic organization, synthesis of research data and testing of null hypothesis by using the obtained data (Polit & Beck, 2004). Analysis and interpretation of data were carried out by using descriptive and inferential statistics. Descriptive statistics such as frequency, percentage, mean and standard deviation were used to describe the demographic variables, clinical variables, Mini-mental status examination. Inferential statistics such as paired t-test (to analyse the difference in cognition score before and after validation therapy.) and chi-square (to analyse the association between cognition score and selected variables) were used.

Expected Outcome

The study will improve the cognition among old age, in turn to do their work effectively and to cope up with their daily stresses and to improve the quality of life.

Summary

This chapter dealt with the selection of research approach, research design, setting, population, sample, sampling technique, sampling criteria, selection and development of study instruments, validity and reliability of study instrument, pilot study, data collection procedure and plan for data analysis.

Chapter IV
Analysis and Interpretation

CHAPTER IV

ANALYSIS AND INTERPRETATION

This chapter deals with the analysis and interpretation of data collected from 30 old age people at Sree Seva Mandhir old age home and another 30 old age people at social beatitudes old age home, Chennai. The study was conducted to determine the effectiveness of validation therapy on cognition among old age people. The data were analysed according to the objectives and hypotheses of the study. Analysis of study was compiled after all the data was transferred to the master data coding sheet. The investigator used descriptive and inferential statistics for data analysis.

The data were analysed, tabulated and interpreted using descriptive and inferential statistics in the sequence as follows:

Organization of findings

- Frequency and percentage distribution of demographic variables in control and experimental group of old age people.
- Frequency and percentage distribution of clinical variables in control and experimental group of old age people.
- Frequency and percentage distribution of level of cognition before and after validation therapy in control and experimental group of old age people.
- Frequency and percentage distribution of level of satisfaction regarding administration of validation therapy in experimental group of old age people.
- Comparison of mean and standard deviation of cognition scores before and after validation therapy between control and experimental group of old age people.

- Association between selected demographic variables and the level of cognition before and after validation therapy in control group of old age people.
- Association between selected clinical variables and the level of cognition before and after validation therapy in control group of old age people.
- Association between selected demographic variables and the level of cognition before and after validation therapy in experimental group of old age people.
- Association between selected clinical variables and the level of cognition before and after validation therapy in experimental group of old age people.

Table 1

Frequency and Percentage Distribution of Demographic Variables in Control and Experimental Group of Old Age People.

Demographic variables	Control Group (n=30)		Experimental Group (n=30)	
	n	p	n	p
Age in years				
60-65	11	36.67	11	36.66
66-70	10	33.33	11	36.67
71- 75	9	30	8	26.67
Mean age= 67				
Educational status				
Illiterate	7	23.33	1	3.33
Primary education	16	53.33	12	40
Secondary education	7	23.34	15	50
Higher secondary	-	-	2	6.67
Graduate and above	-	-	-	-
If spouse is alive, whether he/she is residing in this home				
Yes	14	46.66	6	20
No	16	53.34	24	80
Source of income				
Pensioner	30	100	26	86.66
Govt aid	-	-	4	13.34
Property	-	-	-	-
Savings	-	-	-	-
Nil	-	-	-	-
Monthly income				
1000 – 2000	30	100	30	100
2001-6000	-	-	-	-
6001-10,000	-	-	-	-
≥10,000	-	-	-	-
Nil	-	-	-	-
Religion				
Hindu	14	46.67	30	100
Christians	-	-	-	-
Muslim	16	53.33	-	-
Others (specify)	-	-	-	-

Table 1 shows that majority of the old age people in control and experimental group earned a monthly income of Rs. 1000- 2000 (100%, 100%), were having pension as a source of income (100%, 86.66%) respectively. Most of the old age people have completed primary education in control group and in experimental group have completed secondary education (53.33%, 40%), Christian religion in control group (53.33%) and in experimental group (100%) were Hindus respectively. A significant percentage of the old age people in the control and experimental group were aged between 60-65 years (36.7%, 36.7%) respectively.

Fig.3 shows that most of the old age people in control and experimental group were Females (56.6%, 66.6%) respectively.

Fig.4 depicts most of them in control group were separated (53.3%) whereas in experimental group were widow/widower (46.6%) respectively.

Fig. 5 shows that significant percentage of the old age people in control and experimental group had one child (40, 33.40%)respectively.

Fig.6 depicts that most of them in control group belonged to joint family (53.3%) whereas in experimental group belonged to nuclear family (66.6%) respectively.

Fig.7 shows that most of the old age people in control group and in experimental group were residing in the old age home more than 6 years (43.33%, 60%) respectively.

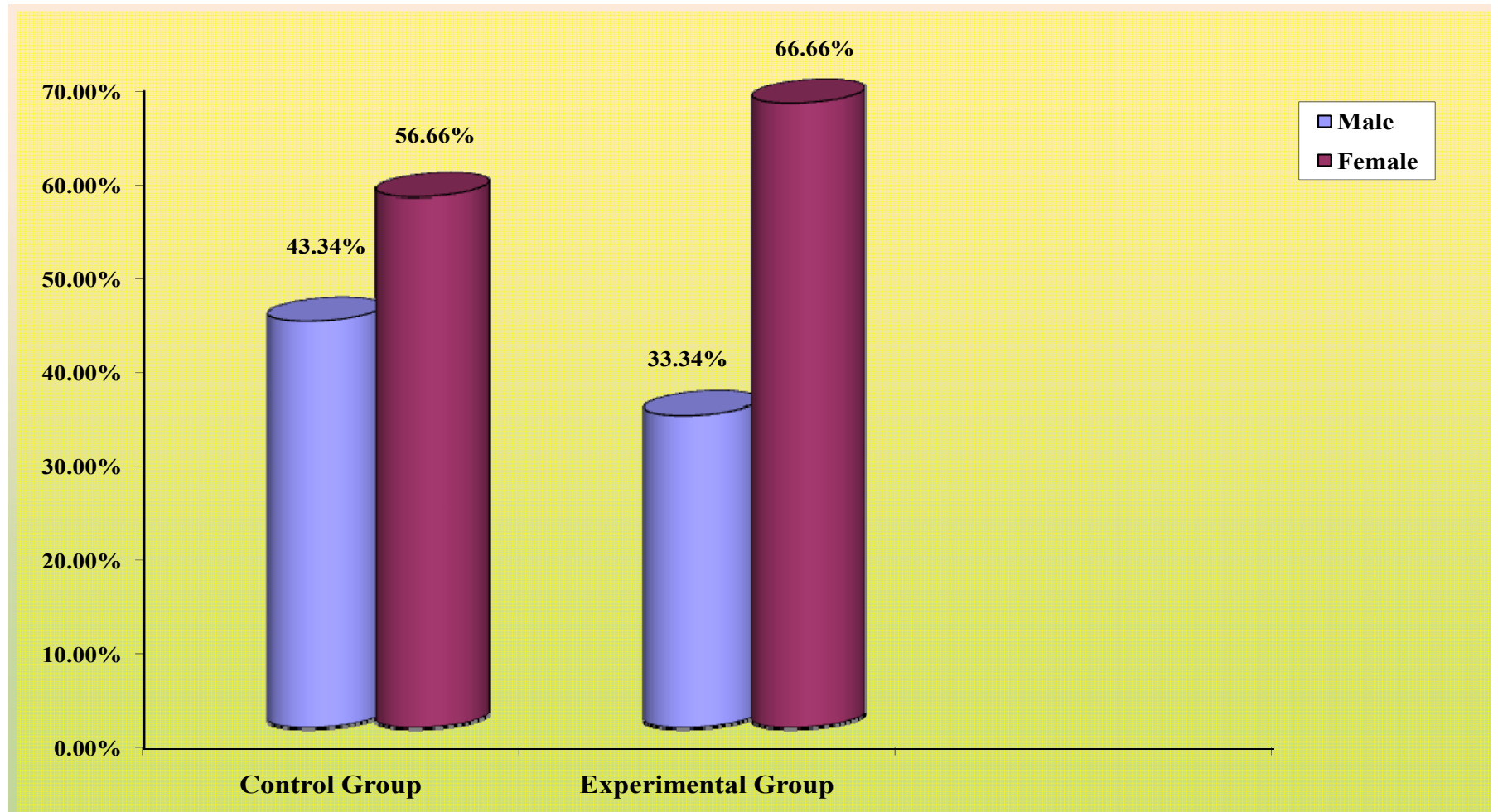


Fig. 3 Percentage Distribution of Gender of Old Age People

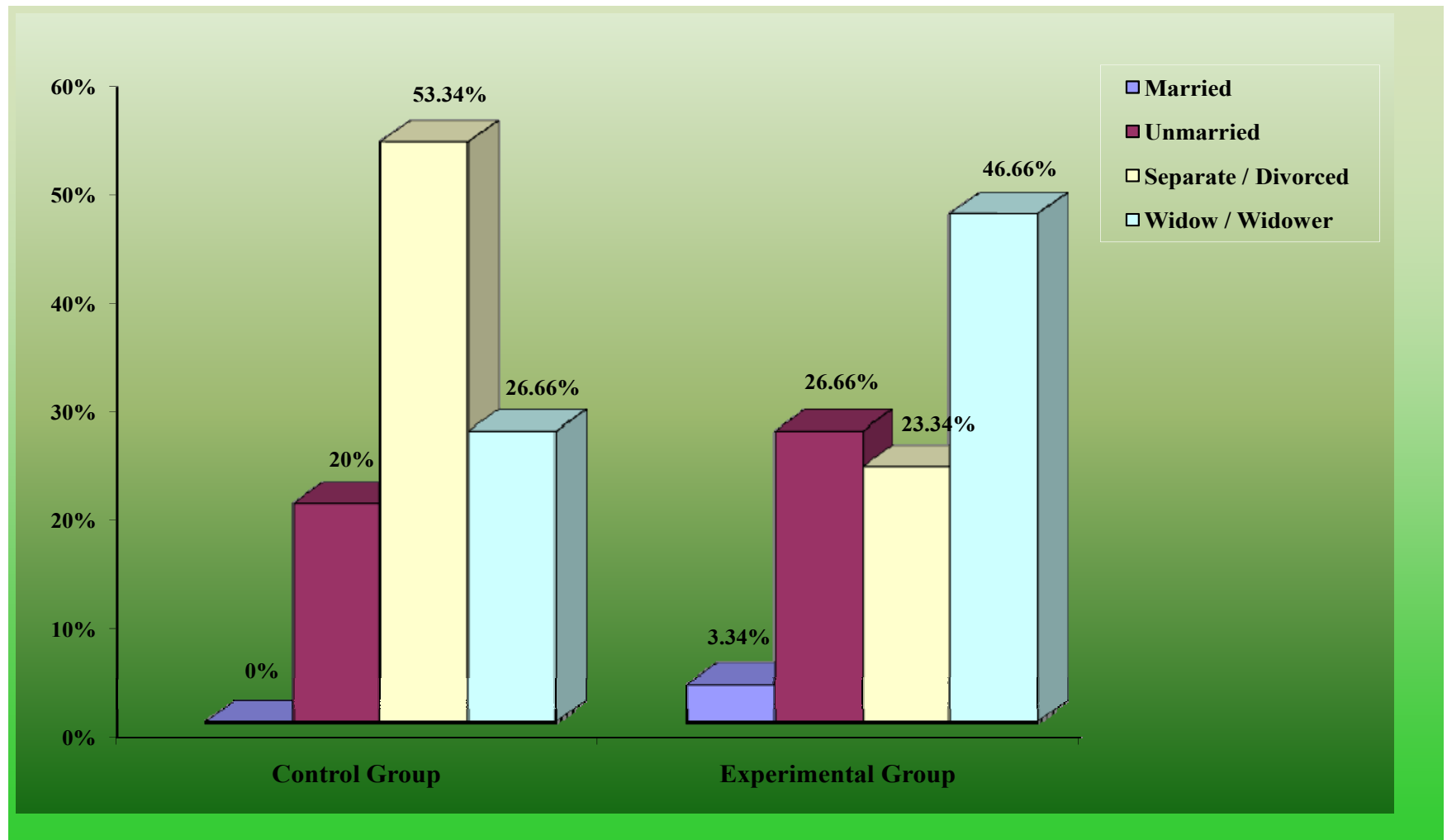


Fig. 4. Percentage Distribution of Marital Status of Old Age People

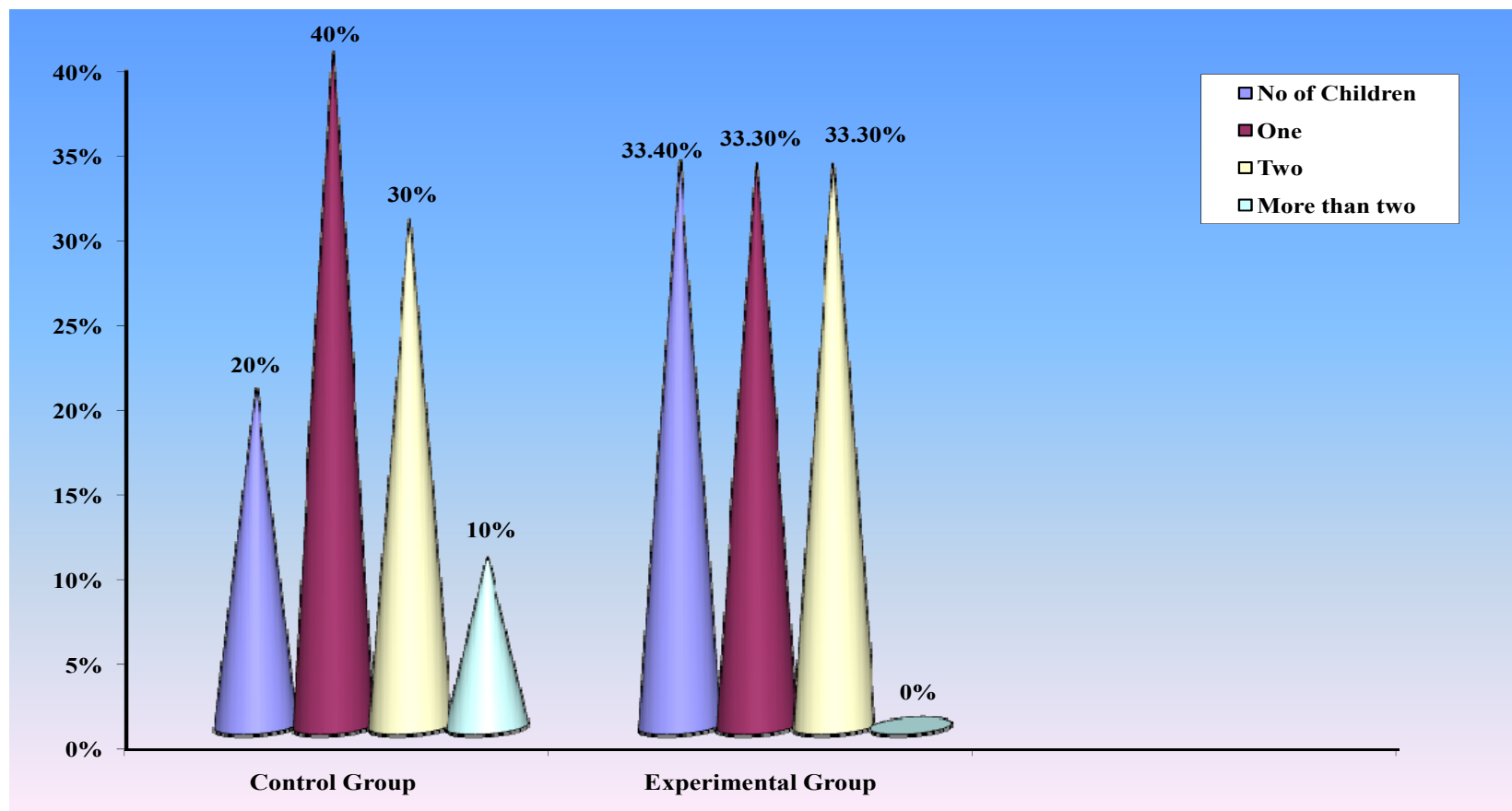


Fig. 5 Percentage Distribution of No of Children of Old Age People

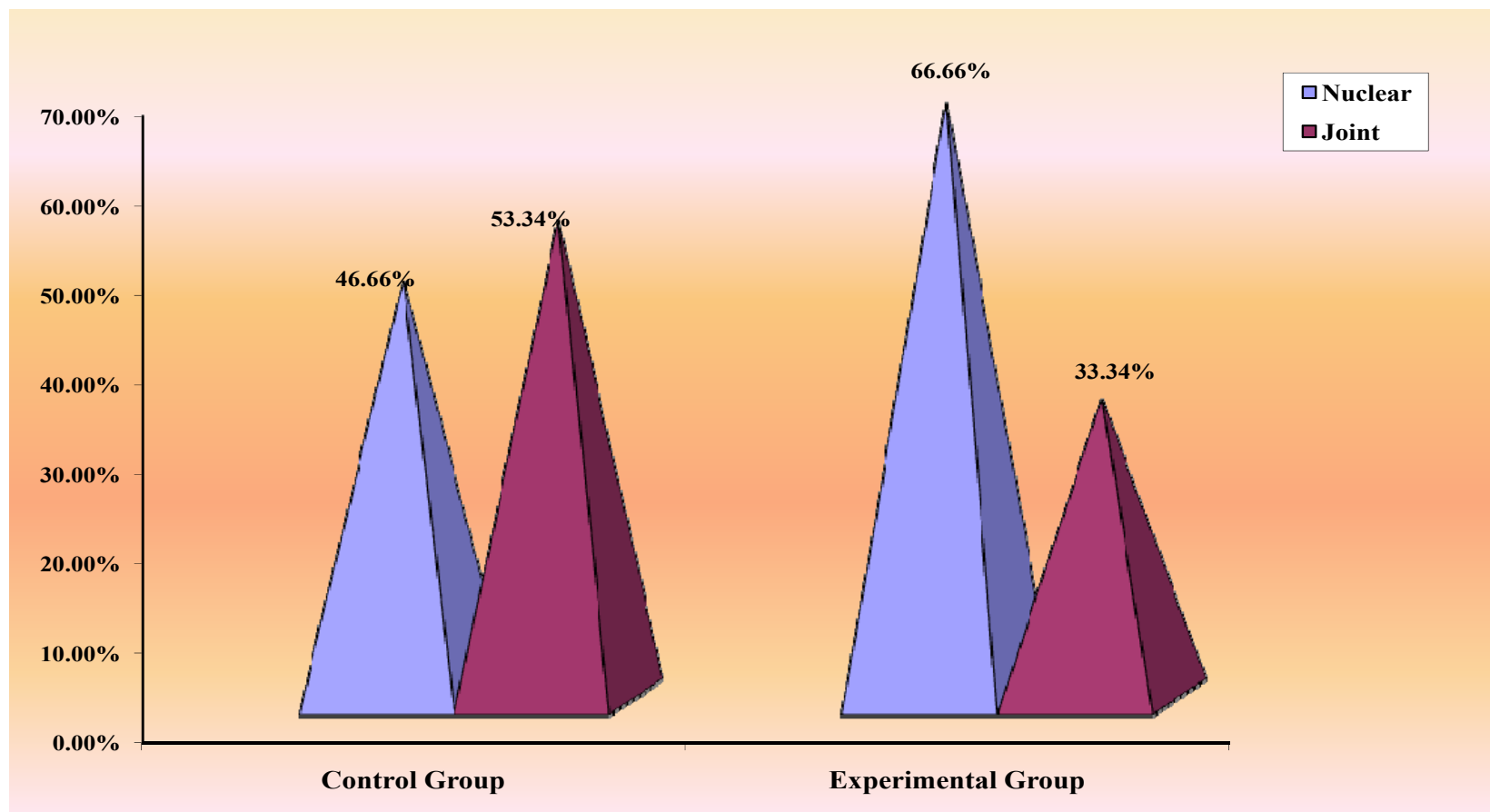


Fig. 6 Percentage Distribution of Type of Family of Old Age People

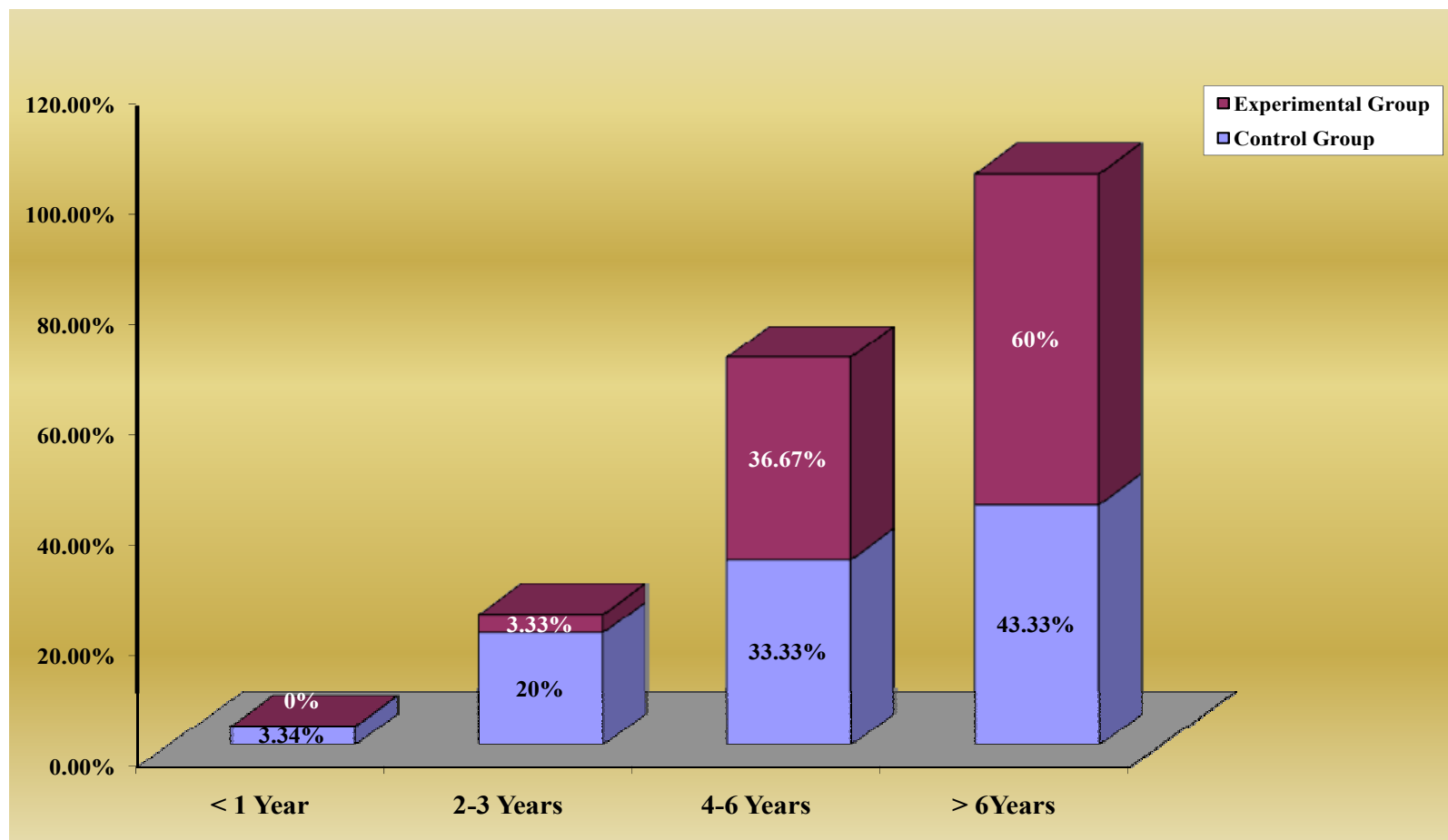


Fig. 7 Percentage Distribution of Duration of Stay in Old Age Home

Table 2

Frequency and Percentage Distribution of Clinical Variables in the Control and Experimental Group of Old Age People.

Clinical variables	Control group (n = 30)		Experimental group (n = 30)	
	n	p	n	p
Any medical illness				
Diabetes mellitus	15	50	11	36.66
Hypertension	-	-	-	-
Arthritis	-	-	-	-
Respiratory problems	-	-	-	-
Others (specify)	6	20	9	30
Nil	9	30	10	33.33
Duration of medical illness				
<1 year	2	6.66	8	26.66
1-5 years	19	63.33	12	40
6-10 years	-	-	-	-
>10 years.	-	-	-	-
History of taking medications for major illness				
Yes	-	-	-	-
No	30	100	30	100
History of Hospitalization within last five years				
Yes	-	-	-	-
No	30	100	30	100
Treatment seeking behaviour for any illness				
Uses Medical facilities	30	100	30	100
Self medication	-	-	-	-
Any others specify	-	-	-	-
History of Smoking				
Smoker	-	-	-	-
Non-Smoker	30	100	30	100
History of Alcoholism				
Non-alcoholic	30	100	30	100
Regular drinker	-	-	-	-

If yes, what was the relaxation therapy you underwent?				
Progressive muscle relaxation	-	-	-	-
Yogasana	4	13.33	7	23.34
Meditation	10	33.33	9	30
Any other (specify)	-	-	-	-

Table 2 shows that majority of them had no history of taking medications for major illness (100%, 100%), did not have a previous history of hospitalization within last five years (100%, 100%), used medical facilities for treatment of any illness (100%, 100%), did not have a history of smoking , were non-alcoholic (100%, 100%) in the control and experimental group respectively.

Most of them in the control and experimental group of old age people had diabetes mellitus (50%, 36.6%), with a duration of 1-5 years (63.33%, 40%) respectively.

Fig 8 depicts that Majority of them in control and experimental group had moderate physical activity (80%, 66.66%) respectively.

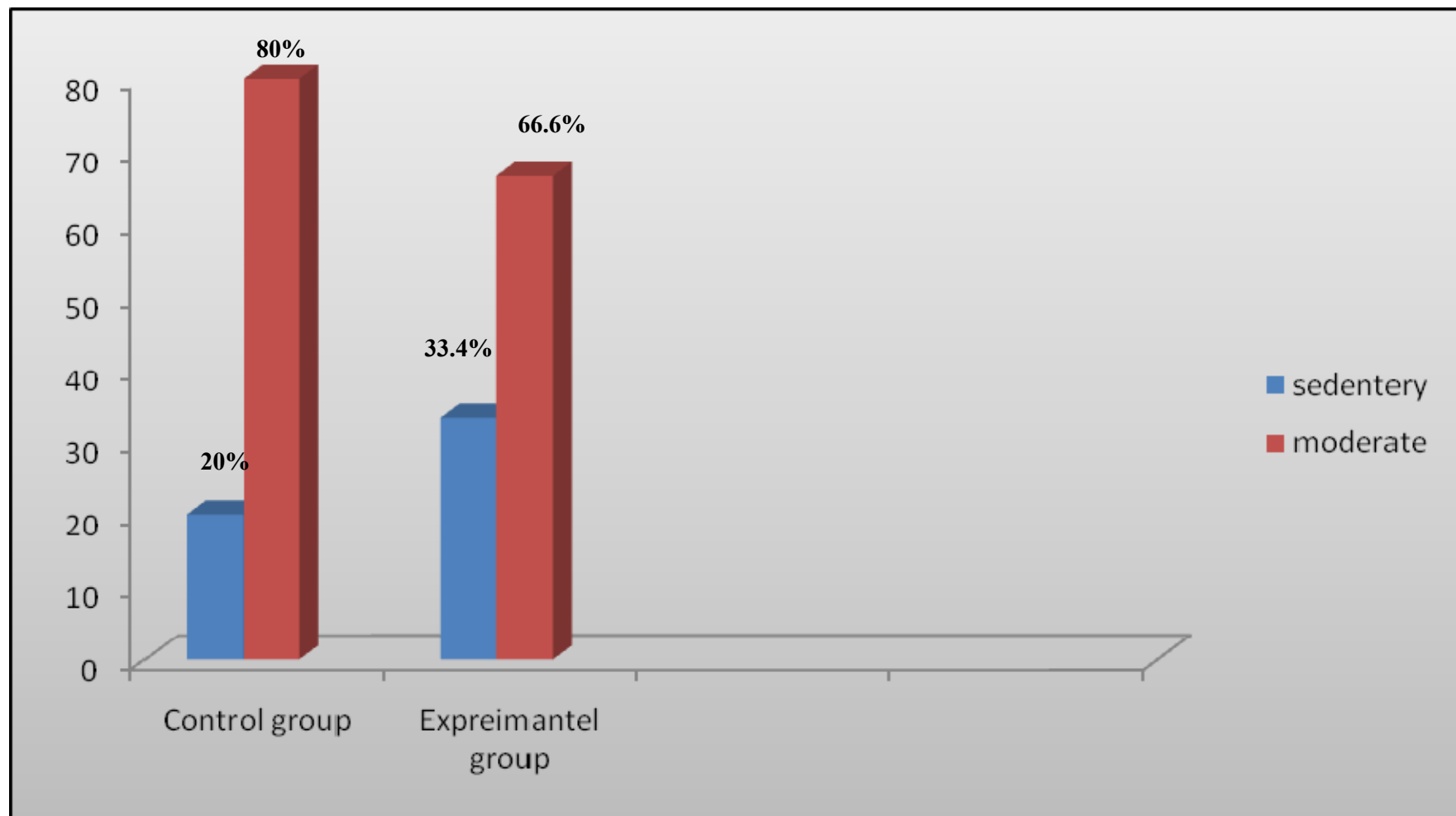


Fig. 8 Percentage Distribution of Physical Activity of Old Age People

Table 3

Frequency and Percentage Distribution of Level of Cognition Before and After Validation Therapy in Control and Experimental Group of Old Age People

Level of cognition	Before therapy (30)		After therapy(30)	
	n	p	n	p
Control group (n=30)				
Normal	4	13.33	-	-
Mild	10	33.33	14	46.67
Moderate	16	53.34	16	53.33
Severe	-	-	-	-
Experimental group (n=30)				
Normal	-	-	23	76.66
Mild	17	56.67	7	23.34
Moderate	13	43.33	-	-
Severe	-	-	-	-

Table 3 shows that in control group most of the old age people had moderate level of before and after validation therapy (53.34%, 53.33%) respectively. However in experimental group, most of the old age people had mild cognitive impairment before therapy (56.67%) whereas after validation therapy, majority of the old age people had normal level of cognition (76.66%).

Table 4

Frequency and Percentage Distribution of Level of Satisfaction on Administration of Validation Therapy in Experimental Group of Old Age People

Level of satisfaction	Highly satisfied		Satisfied		Dissatisfied		Highly dissatisfied	
	n	p	n	p	n	p	n	p
Overall satisfaction	27	90	3	10	-	-	-	-
Questions related to researcher	23	76.66%	7	23.34%	-	-	-	-
Questions related to Validation therapy	25	83.34%	5	16.66%	-	-	-	-

Table 4 depicts that in experimental group majority of the old age people were highly satisfied with all the aspects of administration of validation therapy (90%).

Table 5

Comparison of Mean and Standard Deviation of Cognition Scores Before and After Validation Therapy Between Control Group and Experimental Group of Old Age People.

Group	Before therapy			After therapy		
	Mean	SD	“t” value	Mean	SD	“t” value
Control	19.4	3.44	0.81	19.3	2.17	7.17***
Experimental	20.03	2.92		23.9	3.01	

*** $p < 0.001$

The data presented in table 5 depicted that mean and standard deviation of old age people before validation therapy (M= 19.4, SD= 3.44), (M=19.3, SD= 2.17) between the control and experimental group was not significant ($p > 0.05$), whereas after validation therapy there is a difference in the mean and standard deviation (M=20.03, SD= 2.92), (M=23.9, SD= 3.01) between the control and experimental group. The difference was found statistically significant at level of confidence $p < 0.001$. It can be attributed to the effectiveness of Validation therapy. So Null hypothesis H_{01} was rejected.

Table 6

Association between the Selected Demographic Variables and the Level of Cognition Before and After Validation Therapy in Control Group among Old Age People

N= 30

Demographic variables	Before Mean score=19.4		χ^2	After Mean score=19.3		χ^2
	Upto mean	Above mean		Upto mean	Above mean	
Educational status						
Illiterate	3	4	0.568	3	5	1.238
Primary & secondary	13	10	(df=1)	13	9	(df=1)
Religion						
Hindu	7	7	0.247	10	4	3.927
Christian	9	7	(df=1)	6	10	(df=1)
Type of family						
Nuclear	6	8	1.284	8	8	0.287
Joint	8	6	(df=1)	6	8	(df=1)
Duration of stay in old age home						
Up to 6 years	11	6	2.012	11	6	2.042
More than 6 years	5	8	(df=1)	5	8	(df=1)

Table 6 shows, that there was no significant association between the selected demographic variables such as educational status, religion, type of family and duration of stay in old age home of old age people and level of cognition at $p > 0.01$. So Null Hypothesis H_{02} was retained.

Table 7

Association Between the Selected Clinical Variables and the Level of Cognition Before and After Validation Therapy in the Control Group of Old Age People.

N=30

Clinical variables	Before Therapy			χ^2	After Therapy			χ^2
	Normal	Mild	Moderate		Normal	Mild	Moderate	
Any Medical Illness								
Diabetes mellitus	-	8	3	0.24 (df=1)	9	2	-	0.93 (df=1)
Hypertension	-	-	-		-	-	-	
Arthritis	-	-	-		-	-	-	
Respiratory problems	-	-	-		-	-	-	
Others (specify)	-	6	3		8	1	-	
Nil	-	7	3		7	3	-	
Duration of medical illness								
<1 year	-	6	2	2.75 (df=1)	7	1	-	3.42 (df=1)
1-5 years	-	9	3		10	2	-	
6-10 years	-	-	-		-	-	-	
>10 years.	-	-	-		-	-	-	
History of taking medication for major illness								
Yes	-	8	3	0.027 (df=1)	9	2	-	0.48 (df=1)
No	-	13	6		15	4	-	
Physical activity								
Sedentary	-	7	3	0.075 (df=1)	8	2	-	0.106 (df=1)
Moderate	-	15	5		17	3	-	
Heavy	-	-	-		-	-	-	

Have you received any relaxation therapy before?								
Yes	-	11	5	0.36	13	3	-	0.100
No	-	11	3	(df=1)	12	2	-	(df=1)
What was the relaxation therapy underwent								
Progressive muscle relaxation	-	-	-	1.85	-	-	-	0.2
Yoga	-	6	1	(df=1)	6	1	-	(df=1)
Meditation	-	6	3		9	-	-	
Any other	-	-	-		-	-	-	

It could be inferred from the table 7, shows that there is a no significant relationship between selected clinical variables such as any medical illness, duration of medical illness, history of taking medications, treatment seeking behaviour, history of smoking and alcoholism, physical activity and the level of cognition. Hence, the Null Hypothesis H_{02} was retained.

Table 8

Association between the Selected Demographic Variables and the Level of Cognition Before and After Validation Therapy in Experimental Group of Old Age People

N= 30

Demographic variables	Before		χ^2	After		χ^2
	Mean score=20.03			Mean score=23.9		
	Upto mean	Above mean		Upto mean	Above mean	
Age in years						
Upto 68	11	9	0.225	8	13	0.247
69 -75	6	4	(df=1)	4	5	(df=1)
Gender						
Male	4	6	1.799	5	5	0.739
Female	13	7	(df=1)	7	13	(df=1)
Educational status						
Illiterate	8	4	0.973	6	6	0.949
Primary & secondary	9	9	(df=1)	6	12	(df=1)
Number of children						
No children	7	3	1.274	3	7	0.822
Upto 2	10	10	(df=1)	9	11	(df=1)
Type of family						
Nuclear	11	9	0.227	8	12	0.156
Joint	6	4	(df=1)	4	6	(df=1)
Duration of stay in old age home						
Upto 6 years	5	6	1.009	4	8	0.533
More than 6 years	12	7	(df=1)	8	10	(df=1)

Table 8 shows, that there was no significant association between the selected demographic variables such as age in years, gender, educational status, number of children, type of family and duration of stay in old age home of old age people and level of cognition at $p>0.01$. So Null Hypothesis H_{03} was retained.

Table 9

Association Between the Selected Clinical Variables and the Level of Cognition Before and After Validation Therapy in the Experimental Group among Old Age People.

N=30

Demographic variable	Before Therapy			χ^2	After Therapy			χ^2
	Normal	Mild	Moderate		Normal	Mild	Moderate	
Any Medical Illness								
Diabetes mellitus	-	8	3	0.26 (df=1)	9	2	-	0.93 (df=1)
Hypertension	-	-	-		-	-	-	
Arthritis	-	-	-		-	-	-	
Respiratory problems	-	-	-		-	-	-	
Others(specify)	-	6	-		8	1	-	
Nil	-	7	3		7	3	-	
Duration of medical illness								
<1 year	-	6	2	2.75 (df=1)	7	1	-	3.42 (df=1)
1-5 years	-	9	3		10	2	-	
6-10 years	-	-	-		-	-	-	
>10 years.	-	-	-		-	-	-	
Physical activity								
Sedentary	-	7	3	0.07 (df=1)	8	2	-	0.106 (df=1)
Moderate	-	15	5		17	3	-	
Heavy	-	-	-		-	-	-	
Have you received any relaxation therapy before?								
Yes	-	11	5	0.36 (df=1)	13	3	-	0.1005 (df=1)
No	-	11	3		12	2	-	

It could be inferred from the table 9, shows that there is a no significant association between selected clinical variables such as any medical illness, duration of medical illness, physical activity, relaxation therapy and the level of cognition. Hence, the Null Hypothesis H_{o3} was retained.

Chapter V
Discussion

CHAPTER V

DISCUSSION

Statement of the Problem

A Quasi Experimental Study to Assess the Effectiveness of Validation Therapy upon the Level of Cognition of Old Age People at selected Old Age Homes in Chennai.

Objectives of the Study

1. To assess the level of cognition in control and experimental group of old age people before and after the validation therapy.
2. To assess the effectiveness of validation therapy by comparing the level of cognition in control and experimental group of old age people before and after validation therapy.
3. To determine the level of satisfaction in experimental group of old age people regarding administration of validation therapy.
4. To find out the association between the demographic, clinical variables and the level of cognition before and after validation therapy in control group of old age people.
5. To find out the association between the demographic, clinical variables and the level of cognition before and after validation therapy in experimental group of old age people.

This study was carried out upon 30 old age people at Sree Seva Mandhir, Virugambakkam, Chennai. Validation therapy was conducted after which the cognition level was assessed again. Level of satisfaction regarding validation therapy was also assessed.

The discussion is presented as follows

- Demographic variables in control and experimental group of old age people.
- Clinical variables in control and experimental group of old age people.
- Effectiveness of validation therapy in experimental group of old age people.
- Level of satisfaction regarding administration of validation therapy in the experimental group of old age people.
- Association between selected demographic, clinical variables and the level of cognition before and after validation therapy in control and experimental group of old age people.

Demographic variables in control and experimental group of old age people

The study revealed that significant percentage of the old age people (36.7%, 36.7%) in control group and experimental group were aged between 60-65 years of age. Most of the old age people in control group and in experimental group were females (56.7%, 66.7%), (53.4%, 50%) have completed primary education and secondary education, (53.4%, 46.6%) were divorced/separated and widowed respectively.

A significant percentage of the old age people in control group and experimental group have only one child (40%, 33.4%), (43.4%, 60%) are residing in the old age home for more than 6 years respectively.

Old age is prone to get cognitive decline due to aging process because they requires lot of dependency in day to day life and activities. Females are more probably depressed

than the males. Females have more conflicts within their family members than the males. Due to economical safety males will not come to old age home. Lack of safety may be one of the reason females are more in the old age homes.

Due to personality traits females have less knowledge to cope up in the family. Arguments within the family members, environment is also one of the facts to adapt to the new life style changes. Close relations such as son are going for their work. So they are alone in the home. They will think their worries frequently. This may be one of the reasons for the old age people to reside in old age homes rather than their own homes.

If there is one son, situation makes them to inability to take care of the mother. It is true that, once they enter into the old age homes, most of them usually continue to reside then till death.

Clinical variables in control and experimental group of old age people

Findings of the clinical variables shows that majority of them had moderate physical activity in control and experimental group (80%, 66.67%) respectively. Most of the old age people had diabetes mellitus as a major illness in the control and experimental group (50%, 36.66%) respectively.

The old age is considered as a risk period because they need assistance for most of their daily activities. In the group aged 65–74 years, it is projected that the number with diabetes will triple. In the group aged >75 years, the number of diabetes patients will increase to five times its present level. Old age diabetic patients often have multiple

medical problems (e.g., physical disabilities and mental and emotional problems) that complicate the illness. Furthermore, increased life expectancy means that more of the old age will suffer impaired quality of life (e.g., pain and depression) because of diabetes-related complications. (Applied gerontology).

The results of cohort studies show that physical activity is associated with better cognitive function and less cognitive decline in later life although there is only scant evidence suggesting that physical activity may in fact reduce the risk of dementia and Alzheimer's disease. In addition, data to support the systematic introduction of physical activity programmes to reduce the risk of dementia in later life are not as yet available from randomized clinical trials.

Majority have no previous history of hospitalization and it is shown that old age people had not got admitted in the hospital due to any major illness. The experience and training the old age people would be able to cope up with their problems and carry out the complimentary therapy with more interest and knowledge.

Effectiveness of validation therapy in control and experimental group of old age people

Most of the old age people had moderate level of cognitive impairment before and after validation therapy 53.34% in control group. Most of the old age people had mild level of cognitive impairment 56.67% in experimental group whereas after validation therapy it has been improved to normal level of cognition (76.66%) , which may be attributed into

effectiveness of validation therapy. Old age people will think about their worries and they will not interact with others. Validation therapy is a method of communication between the old age people, so they are readily accepting them to participate in these sessions involved like group discussions and some techniques.

Feil (1972), study findings gave us the positive results of validation therapy. Through this their speech have improved, less negative affect such as crying, hitting; more positive affect such as smiling, talking, helping others; people are more aware of their external reality and they talked outside of group meetings. The mean and standard deviation of cognition score before therapy was low ($M= 20.03$, $SD= 2.92$) in comparison with the mean and standard deviation of cognition score after therapy ($M= 23.9$, $SD= 3.01$). The difference ($t=7.17$) was found statistically significant at level of confidence $p<0.001$. So Null Hypothesis H_{01} was rejected.

This is also evidenced by higher mean score 23.9 in level of cognition in post-test of experimental group than pre-test of experimental group and post-test of control group. This is consistent with the study findings and is supported by study findings of other research studies.

Level of satisfaction regarding administration of validation therapy in experimental group of old age people

The study findings revealed that majority of the old age people (90%) were highly satisfied with all the aspects of the validation therapy. Since validation therapy is

inexpensive, stimulating, interacting, entertaining, thought provoking and motivating factor for positive thinking, it is lined by most of the participants. Thus nurse can plan for various validation techniques and methods incorporating with their regular activities in various settings like community, hospitals and old age homes etc.

Bleath man in a study among 100 old age people that validation therapy is positively related to validation therapy. Validation therapy could be built by improving the cognition. The researcher identified various methods by which this could be done through extensive research of literature and suggestions from experts. Hitch (1994) study findings noted that validation therapy promotes contentment, results in less negative affect and behavioural disturbance, produces positive effects and provides the individual with insight into external reality. It was, however, suggested that therapists could become too focused on confused communication and could fail to identify simple explanations such as pain or hunger. Neal & Briggs (2002) evaluated validation therapy across a number of controlled trials, employing cognitive and behavioural measures. They concluded that despite some positive indicators, the jury was still out with respect to its efficacy.

Association between the selected demographic, clinical variables and the level of cognition before and after validation therapy in control and experimental group of old age people

The study findings revealed that there was no association between the demographic variables and the level of cognition of the old age people. This illustrated the fact that

cognition has its clutch on all, irrespective of age, gender, education, number of children, type of family, duration of stay and religion.

The study findings revealed that there was no association between the clinical variables and the level of cognition of the old age people.

Lack of association in this study may be due to small sample size. This also indicates the fact that there will be no association between the selected demographic variables and the clinical variables and the level of cognition.so Null Hypotheses H_{o2} and H_{o3} was retained.

Summary

This chapter has dealt with the objectives of the study, major findings of the demographic variables and the level of cognition, association between the demographic variables and the level of cognition and level of satisfaction regarding validation therapy.

Chapter VI
Summary, Conclusion, Implications
and Recommendations

CHAPTER VI

SUMMARY, CONCLUSION, IMPLICATIONS, RECOMMENDATIONS AND LIMITATIONS

This is the most creative and demanding part of the study. This chapter gives a brief account of the present study including the conclusion drawn from the findings, recommendations, limitations of the study, suggestions for the study and nursing implications.

Summary

The aim of the study was to assess the effectiveness of validation therapy upon the level of cognition of old age people at selected old age homes in Chennai.

Objectives of the Study

1. To assess the level of cognition of control and experimental group of old age people before and after the validation therapy.
2. To assess the effectiveness of validation therapy by comparing the level of cognition in control and experimental group of old age people before and after validation therapy.
3. To determine the level of satisfaction in experimental group of old age people regarding administration of validation therapy.
4. To find out the association between the demographic, clinical variables and the level of cognition before and after validation therapy in control group of old age people.

5. To find out the association between the demographic, clinical variables and the level of cognition before and after validation therapy in experimental group of old age people.

Null Hypotheses

- H₀₁** There will be no significant difference in the level of cognition before and after validation therapy between control and experimental group of old age people.
- H₀₂** There will be no significant association between the selected demographic and clinical variables and level of cognition before and after validation therapy in control group of old age people.
- H₀₃** There will be no significant association between the selected demographic and clinical variables and level of cognition before and after validation therapy in experimental group of old age people.

The conceptual framework of the study was developed on the basis of Dunn's model of High level wellness which focuses on maximizing the health potential of an individual. It involves higher level functioning, to live life to the fullest potential. Here health care is directed at helping the old age attain high level wellness, emphasizing health promotion and illness prevention, rather than treatment.

The study variables were the validation therapy and cognition. Hypotheses were formulated. The level of significance at $P < 0.05$ level, was considered as significant.

An extensive review of literature and guidance by experts formed the foundation to the development of the study instruments. An experimental research of pre-test and post-

test design was used to achieve the objectives of the study. The present study was conducted at Sree Seva Mandhir old age home, Virugambakkam and Social beatitudes old age home, Vyasarpadi. The sample size was 30 old age people in experimental group and 30 samples from the control group. They were selected by purposive sampling technique; according to the availability of old age people who fulfilled the inclusion criteria.

The researcher used a demographic variable proforma, clinical variable proforma, Mini- mental status examination scale by Folstein et al and a rating scale on level of satisfaction regarding administration of validation therapy, for collecting data. After the pilot study, the data for the main study was collected. The collected data was tabulated and analysed using descriptive and inferential statistics.

The Major Findings of the Study

Demographic variables of old age people

Majority of the old age people in control and experimental group were having pension as a source of income (100%, 86.6%), having monthly income Rs. 1000-2000 (100%, 100%), belongs to Christian religion in control group (53.3%) and (100%) were Hindus in experimental group respectively. Most of the old age people in control group and experimental group were females (56.7%, 66.7%), divorced and widowed (53.4%, 46.6%), have completed primary education (53.33%, 50%) respectively. A significant percentage of the old age people duration of stay in the old age home more than 6 years (43.4%) in control group and most of them in experimental group (60%) respectively.

Clinical variables of old age people

Majority of them had moderate physical activity (80%, 66.66%), not having history of taking medications for major illness (100%, 100%), not hospitalized within last five years (100%, 100%), not smoked (100%, 100%), no history of alcoholism (100%, 100%) and did not practice any relaxation technique (60%, 46.66%) in control and experimental group respectively. Significant percentage of them had undergone relaxation therapy (33.33%, 30%) and had sedentary physical activity (20%, 30.33%) in the control and experimental group respectively.

Level of cognition before and after validation therapy in experimental and control group of old age people

Majority of the old age people (56.67%) have moderate level of cognitive impairment before and after therapy in control group and in experimental group it has been improved to normal level of cognition (76.66%) after therapy.

Mean and standard deviation of validation therapy upon the level of cognition in experimental group of old age people

The mean and standard deviation of cognition score before therapy was low ($M=20.03$, $SD=2.92$) in comparison with the mean and standard deviation of cognition score after therapy ($M=23.9$, $SD=3.01$). The difference ($t=7.17$) was found statistically significant at level of confidence $p<0.001$. So Null Hypothesis H_{01} was rejected.

Association between the selected demographic, clinical variables and the level of cognition before and after validation therapy in control group of old age people

There was no significant association between the selected demographic, clinical variables of old age people and level of cognition at. So, Null hypothesis H_{02} was retained.

Association between the selected demographic, clinical variables and the level of cognition before and after validation therapy in experimental group of old age people

There was no significant association between the selected demographic, clinical variables of old age people and level of cognition. So, Null hypothesis H_{03} was retained.

Level of satisfaction regarding administration of validation therapy in experimental group of old age people

Majority of the old age people were highly satisfied with all the aspects of administration of validation therapy (90%).

Conclusion

The level of cognition can be improved by effective interventions aimed at creating awareness, enhancing self-esteem and coping skills. These interventions are simple and can be integrated to the daily routine of old age people, especially when they are in the old age home. This in turn improves the quality of life of the old age people.

Implications

The implications for nursing practice, nursing education, nursing administration and nursing research are recommended based on the findings of the study.

Nursing practice

The findings of this study reveal that about 75% of the old age people cognition level has been improved. The study also shows that the cognition was all prevailing irrespective of age, gender, duration of illness or any other demographic variables of the old age people. The study findings show that the level of cognition can be improved by effective interventions which are simple and implemented in the clinical areas by nurses.

Nursing education

Integration of theory and practice is important in nursing education. With the emerging health care trends, nursing education must focus on innovations to enhance nursing care. Some research suggests that nurses and other mental health care providers actually co-ordinate the care and by the therapies for old age people to improve the level of cognition. Thus, nursing education has to be targeted as a venue to challenge all the facts of old age people and replace it with recovery and empowerment. The nursing students should be taught about the importance of improving the level of cognition to enhance the quality of life of the old age people.

Nursing administration

Periodic formal training program for nurses regarding cognitive improvement strategies can be organized by the nurse administrator. The staff can be encouraged to practice this in main stream of treatment and rehabilitation. Nursing administrators can arrange for conference, in service education and workshops and encourage staff nurses to undertake research studies in the area of cognition in order to prevent mental illness for old age people and disseminate the findings.

Nursing research

In India, evidence based clinical strategies are not sufficient to address barriers to recovery. There is a broad opening, especially for nurses to take up research activities in these aspects. Nurses need to take steps to help the old age people. This can only be done if nurses enter the research field and disseminate the findings through journals, conferences, workshops, seminars, other publications and the validation website.

Recommendations

- The study can be conducted on larger sample to generalize the results.
- The study can be conducted in community settings.
- A comparative study can be conducted to evaluate the effectiveness of various other interventions to help the old age people in order to improve their cognition.

- A longitudinal study with time series design can be conducted with the post test of an interval of 2, 4, 6 months to assess how long the effectiveness of the programme lasts.
- A comparative study can be conducted to assess cognition among old age people, family members and health care professionals.

Limitations

- The study findings cannot be generalized due to small sample size.
- Random sampling was not possible due to practical difficulties.
- True experimental research was not possible due to practical difficulties.

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Appendices

APPENDIX I

LETTER SEEKING PERMISSION TO CONDUCT STUDY



Apollo College of Nursing

(Recognised by the Indian Nursing Council and Affiliated to
the Tamil Nadu Dr. M.G.R. Medical University, Chennai)

CO/0144/11

15/03/2011

To

The Director,
Sri Seva Mandir,
Sainagar
Virugambakkam.

OK
Abul
20/3/11

Respected Sir / Madam,

Sub.: To request permission for research study – Reg.

Greetings! As part of the curriculum requirement our 1st year M. Sc. (N) student
Ms. Sindhumathi. R has selected the following title for her research study.

**“An experimental Study to assess the effectiveness of Validation Therapy on
Cognition among Old Age People in Selected Old Age Homes at Chennai”.**

So I kindly request your goodselves to permit her to conduct study in your esteemed
institution.

Thanking You,

Dr. LATHA VENKATESAN
PRINCIPAL

To work on project
day with Miss Maheswari
(nurse)

IS/ISO 9001:2000



Vanagaram to Ambattur Main Road, Ayanambakkam, Chennai - 600 095.
Ph. : 044 - 2653 4387 Tele fax : 044 - 2653 4923 / 044- 2653 4386

APPENDIX II

ETHICAL COMMITTEE LETTER

Ethics Committee



22 June, 2011

To
Ms. Sindhumathi
1st Year M.Sc (Nursing)
Dept. of Psychiatry
Apollo College of Nursing, Chennai
Tamil Nadu, India

Ref: An experimental study to assess the effectiveness of validation therapy in cognition among old age people in selected old age home

Sub: Your letter dated 9 June, 2011 for approval of the above referenced project and its related documents

Dear Ms. Sindhumathi,

Ethics committee – Apollo Hospitals has received the following document submitted by you related to the conduct of the above – referenced study.

- Project “An experimental study to assess the effectiveness of validation therapy in cognition among old age people in selected old age home”
- Study Performa
- Informed consent form

The above-mentioned documents have been reviewed and approved (through expedited review) by the Chairman, Vice-Chairman and Member Secretary at a specially convened meeting of the Ethics Committee. The study is hereby approved to be conducted by you in the presented form

The following Ethics Committee members were present at the meeting held on 22 June, 2011

Name	Profession	Position in the committee
Mr. S. S. Narayanan	Ethicist	Chairman
Dr.Radha Rajagopalan	Clinician	Vice - Chairman
Dr. Jayanthi Swaminathan	Sr.GM Clinical & Collaborative Research	Member Secretary

Apollo Hospitals Enterprise Limited
21, Greams Lane, Off Greams Road, Chennai - 600 006
Tel : 91 - 44 - 2829 3333 Extn : 6008, 91 - 44 - 2829 5465 Extn : 6639 Fax : 91 - 44 - 2829 4449
E - Mail : ecapollochennai@gmail.com


Ethics Committee



After due ethical and scientific consideration, the Ethics Committee has approved the above presentation submitted by you.

The Ethics Committee is constituted and works as per ICH-GCP, ICMR and revised Schedule Y guidelines.

Yours sincerely,



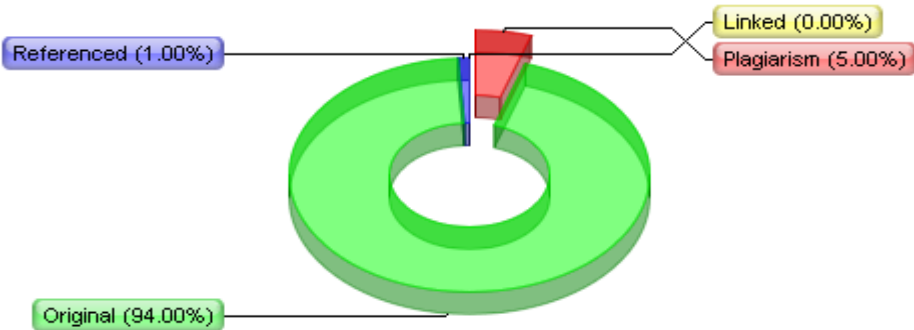

Dr. Radha Rajagopalan
Ethics Committee – Vice Chairman
Apollo Hospitals, Chennai

Date 22/6/11

DR. RADHA RAJAGOPALAN
Vice Chairman
Ethics Committee
Apollo Hospitals Enterprise Limited
Chennai-600 006 Tamil Nadu.

APPENDIX III

PLAGIARISM REPORT

	Plagiarism Detector - Originality Report
	Plagiarism Detector Project: [http://plagiarism-detector.com] Application core version: 557
	<p>This report is generated by the unregistered Plagiarism Detector Demo version!</p> <ul style="list-style-type: none"> • 600 initial words analysis only • partial plagiarism detection • some important results are excluded • no external file processing <p>Register the software - get the complete functionality!</p>
Originality report details:	
Generation Time and Date:	1/22/2012 12:22:37 PM
Document Name:	R.Sindhumathi full thesis.doc
Document Location:	C:\Documents and Settings\Administrator\Desktop\ R.Sindhumathi full thesis.doc
Document Words Count:	14903
<div> Plagiarism Detection Chart  </div>	
Referenced 1% / Linked 0%	
Original - 94% / 5% - Plagiarism	

APPENDIX IV

LETTER SEEKING PERMISSION TO USE THE TOOL



FW: sindhu i am doing my Msc .nursing

Monday, March 21, 2011 1:15 PM

From:

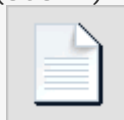
"Vicki King" <vking@parinc.com>

To:

"sindhusasha@yahoo.com" <sindhusasha@yahoo.com>

Message contains attachments

1 File (808KB)



• Permission Request Form.rtf

Dear Sindhu Sasha,

I am responding to you on behalf of Dr. Folstein. Thank you for your interest in the Mini-Mental State Examination (MMSE).

If you wish to use the MMSE for your research study and plan to use the test in its entirety, please purchase the published version of the test. You can do this by contacting PAR Customer Service via telephone at 1.813.449.4065, via e-mail at custsup@parinc.com or you can go to our website at www.parinc.com and place your order online.

If you plan to modify or use only part of the test, written permission is required prior to using the test. Please complete our Permission Request Form attached and return it to copyright@parinc.com and our Permissions Specialist will be happy to assist you.

We look forward to hearing back from you.

Sincerely,

Vicki King
Executive Assistant to the
Chairman and CEO

Psychological Assessment Resources, Inc.
16204 N. Florida Avenue
Lutz, FL 33549
www.parinc.com
Phone: 813-968-3003
Fax: 813-968-2598

APPENDIX V

LETTER SEEKING PERMISSION FOR CONTENT VALIDITY

From

MS.

M.SC (Nursing) II year,
Apollo college of Nursing,
Chennai- 600 095.

To

Dr. LathaVenkatesan,
Principal,
Apollo college of Nursing,

Sub: Request for opinion and suggestion of experts for establishing content validity of
Research tool.

Respected Madam,

Greetings! As a part of the Curriculum Requirement the following research title is selected for the study. **“A Quasi Experimental Study to Assess the Effectiveness of Validation Therapy upon the Level of Cognition of Old Age People at selected Old Age Homes”, Chennai.** I will be highly privileged to have your valuable suggestions with regard to the establishment of content validity of Research tool. So I request you to validate my research tool and give suggestions about the tool.

Thanking you,

Yours sincerely,

Place:

Date:

APPENDIX VI

CONTENT VALIDITY CERTIFICATE

I hereby certify that I have validated the Research tool and interventional programme of Ms.R.Sindhumathi, M.Sc. (Nursing) 2ndyr student who is undertaking research study.

A Quasi-experimental study to assess the effectiveness of Validation therapy upon the level of cognition of old age people at selected old age homes in Chennai.

Signature of expert

APPENDIX VII

LIST OF EXPERTS FOR CONTENT VALIDITY

1. **Dr. Latha Venkatesan, M.Sc. (N), M.Phil. , Ph.D.,**
Principal & Professor in Nursing,
Apollo College of Nursing,
Chennai-600095
2. **Mrs. Lizy Sonia, A. M.Sc. (N), Ph.D.,**
Vice Principal & Professor in Nursing,
Apollo College of Nursing,
Chennai-95.
3. **Dr. Peter Fernandez, M.D., D.P.M., T.D.D., F.I.P.S.,**
Professor Emeritus (Psychiatry),
Chairman, Doctor Fernandez Home for Schizophrenia,
Mugaliwakkam, Chennai-600116.
4. **Mrs. K.Vijayalakshmi, M.Sc. (N), M.A. (Psychology), Ph.D.**
Professor, Head of the department,
Department of Mental Health Nursing,
Apollo College of Nursing, Chennai.
5. **Mrs. J.Jaslina Gnanarani, M.Sc.,**
Reader ,
Department of Medical Surgical Nursing,
Apollo College of Nursing, Chennai.

11. **Mrs. Anuradha. C., M.Sc. (N)**
Associate Professor,
Department of Mental Health Nursing,
Apollo College of Nursing, Chennai.
12. **Mrs. Stella Mary. I., M.Sc. (N)**
Lecturer,
Department of Mental Health Nursing,
Apollo College of Nursing, Chennai.

APPENDIX VIII
RESEARCH PARTICIPANT CONSENT FORM

Dear participant,

I am M.Sc. Nursing 2nd year student of Apollo College of Nursing. As a part of my studies, I have undertaken a research study of Validation Therapy on Cognition among old age people. As participants in the study, I request your consent and co-operation. The details that you provide will be kept confidential and your name will not be published elsewhere.

Researcher's signature

I , here by consent to participate and undergo the study.

Signature of the Participant

APPENDIX IX

CERTIFICATE FOR VALIDATION THERAPY



Estd. 1986

☎ : 044-2435 8636, Cell : 94440 26341

INDIAN SCHOOL OF YOGA (Regd.)

(An Institute of Yoga Research, Treatment & Training)

#5, Gopal Street, (Near T.Nagar Bus Terminus & Aruna Hotel) T.Nagar, Chennai - 600 017.

Dr. A.S. ASHOK KUMAR, Ph.D., (Y.Sc.,)

Founder : Chief Yoga Therapy Consultant
Siddha Physician & Numerology Consultant

Founder & Executive Chairman : I.S.Yoga D.Y.T. - Alumni

Managing Trustee : Dr. A.S. Ashok Kumar Yoga & Naturopathy Trust

Certificate

Date : 20/3/2011.

This is to certify that a student Ms.R.Sindhumathi M.Sc (Nursing) from Apollo college of nursing, Chennai-95, has done her training in Indian school of yoga, 5thGopal street, T.Nagar, Chennai-17 during the month of March.

The project entitled An experimental study to assess the effectiveness of validation therapy upon the level of cognition of old age people at selected old age homes and she had a training in that topic & also during her period she has acquired herself well she has prompt in her duty and her conduct has been good.

Signature

For INDIAN SCHOOL OF YOGA

A.S. Ashok Kumar

Director

APPENDIX X

CERTIFICATE FOR ENGLISH EDITING TO WHOMSOEVER IT MAY CONCERN

This is to certify that the dissertation "A Quasi Experimental study to assess the effectiveness of validation therapy on cognition among old age people in selected old age homes, Chennai." by Ms. R. Sindhumathi, II Year M.Sc(N), Apollo College of Nursing was edited for English language appropriateness by



Signature

K. SANKARARAJI B.Sc, M.A, M.Ed.

M.A, P.B. Ed., O.S.A.C, MT

Teacher in English (HSE)

**J.T.D. Sri Venkateswara H.S. School,
Vellore - 632001.**

APPENDIX XI

CERTIFICATE FOR TAMIL EDITING TO WHOMSOEVER IT MAY CONCERN

This is to certify that the dissertation “ **A quasi experimental study to assess the effectiveness of validation therapy upon the level of cognition of old age people at selected old age homes , Chennai**” by Ms. R.Sindhumathi II – year MSc. (N) student, Apollo College Of Nursing was edited for Tamil language appropriateness by



Signature

S. VALARNILA, M.A., B.Ed.,
SCHOOL ASSISTANT
JAIGOPAL GARGDIA GOVT.
HR. SEC. SCHOOL,
TVT, CHENNAI-600 019.

APPENDIX XII

DEMOGRAPHIC VARIABLE PROFORMA

Purpose

This proforma is used to measure the demographic variables such as age, sex, marital status, education, occupation, religion, source of income, type of family, duration stay in old age home etc.

Instruction

- ✓ Please put a tick in the following options.
- ✓ Please be frank in answering.

Identification data:

Sample no:

1. Age in years

- | | |
|-------------------|--------------------------|
| 1.1 60 – 65 years | <input type="checkbox"/> |
| 1.2 66 _ 70years | <input type="checkbox"/> |
| 1.3 71 _ 75 years | <input type="checkbox"/> |

2. Gender

- | | |
|------------|--------------------------|
| 2.1 Male | <input type="checkbox"/> |
| 2.2 Female | <input type="checkbox"/> |

3. Educational status

- | | |
|-------------------------|----------------------|
| 3.1 Illiterate | <input type="text"/> |
| 3.2 Primary education | <input type="text"/> |
| 3.3 Secondary education | <input type="text"/> |
| 3.4 Higher education | <input type="text"/> |
| 3.5 Graduate and above. | <input type="text"/> |

4. Marital status

- | | |
|-----------------------|----------------------|
| 4.1 Married | <input type="text"/> |
| 4.2 Unmarried | <input type="text"/> |
| 4.3 Separated/divorce | <input type="text"/> |
| 4.4 Widow/widower | <input type="text"/> |

5. If spouse is alive, whether he/she is residing in this home.

- | | |
|---------|----------------------|
| 5.1 Yes | <input type="text"/> |
| 5.2 No | <input type="text"/> |

6. Source of Income

- | | |
|----------------------|----------------------|
| 6.1 Pensioners | <input type="text"/> |
| 6.2 Govt aid | <input type="text"/> |
| 6.3 Property | <input type="text"/> |
| 6.4 Savings | <input type="text"/> |
| 6.5 Others [specify] | <input type="text"/> |

7. Monthly Income

7.1 < 2000

7.2 2001-6000

7.3 6001-10,000

7.4 >10,000

7.5 Nil

8. Number of Children

8.1 No children

8.2 One

8.3 Two

8.4 More than two

9. Religion

9.1 Hindu

9.2 Muslim

9.3 Christian

9.4 Others[specify]

10. Type of the Family

10.1 Nuclear

10.2 Joint

10.3 Extended

11. Duration of Stay in the old age home

11.1 < 1 year

11.2 2-3 years

11.3 4-6 years

11.4 > 6 years

,izg;G
r%fmwptpay; gl;bay;

Nehf;fk;:

taJ> ghypdk;> jpUkzepiy> gzp> khjhe;jpu tUkhdk;> FLk;gtif Nghd;w kf;fspay;
rhHe;j khw;wj;jf;fitfis mstpLtjw;F ,g;gbtk; gad;gLj;jg;gLfpwJ. ,J kf;fspd; r%fkW;Wk;
FLk;gjfty;fis kjpg;gpLtjw;fhf tbtikf;fg;gl;Ls;sJ.

mwpTWj;jy;fs;:-

jaTnra;J gpd;tUk; Nfs;tpfis gbf;fTk;> gjpy;fSf;F mUfpy; toq;fg;gl;Ls;s
ngl;bfsy; bf; nra;aTk; my;yJtoq;fg;gl;Ls;s Nfhbl;l ,lq;fisepug;gTk;. jaTnra;J cq;fsJ
gjpy;fis Rje;jpukhfTk; kw;Wk; ntspg;gilahfTk; njhptpf;fTk;. jfty;fs; ufrpakhfitfg;gLk;
kw;Wk; Muha;r;rp Nehf;fq;fSf;fhf kl;LNk mitgad;gLj;jg;gLk;.

khjphpvz;.

1. taJ

1.1 60-65 Mz;Lfs;

1.2 66-70 Mz;Lfs;

1.3 71-75 Mz;Lfs;

2. ghypdk;

2.1 Mz;

2.2 ngz;

3. kjk;

3.1 ,e;J

3.2 ,];yHkpaH

3.3 fpwp];JtH

3.4 gpw (Fwpg;gplTk;)

4. fy;tpepiy

- | | | |
|-----|-------------------------------|----------------------|
| 4.1 | fy;tpawpTmw;wtH | <input type="text"/> |
| 4.2 | njhlff;fy;tp | <input type="text"/> |
| 4.3 | eLepiyf; fy;tp | <input type="text"/> |
| 4.4 | caHepiyf;fy;tp | <input type="text"/> |
| 4.5 | gl;lg;gbg;Gkw;Wk; mjlw;FNky; | <input type="text"/> |
| | | |
| 5. | FLk;gtif | |
| 5.1 | jdpl;FLk;gk; | <input type="text"/> |
| 5.2 | \$l;Lf;FLk;gk; | <input type="text"/> |
| | | |
| 6. | kzepiy | |
| 6.1 | jpUkzkhdH | <input type="text"/> |
| 6.2 | jpUkzkhfjH | <input type="text"/> |
| 6.3 | gphpe;Jtho;gtH / tpthfuj;jhdH | <input type="text"/> |
| 6.4 | tpjit / kidtpia ,oe;jtH | <input type="text"/> |
| | | |
| 7. | khjhe;jputUkhdK; | <input type="text"/> |
| 7.1 | 1000-2000 | <input type="text"/> |
| 7.2 | 2001-6000 | <input type="text"/> |
| 7.3 | 6000-10000 | <input type="text"/> |
| 7.4 | fpilahJ | <input type="text"/> |
| | | |
| 8. | tUkhdj;jpw;fhdmjhuk; | <input type="text"/> |
| 8.1 | Xa;T+jpak; | <input type="text"/> |
| 8.2 | gpwhplkpUe;JMjuT | <input type="text"/> |
| 8.3 | Nrkpg;Gfs; | <input type="text"/> |
| 8.4 | nrhj;Jf;fs; | <input type="text"/> |
| 8.5 | fpilahJ | <input type="text"/> |
| 8.6 | gpw (Fwpg;gplTk;) | <input type="text"/> |
| | | |
| 9. | Foe;ijfspd; vz;zpf;if | <input type="text"/> |

9.1 Foe;ijfs; fpilahJ

9.2 xd;W

9.3 ,uz;L

9.4 ,uz;Lf;Fk; Nky;

10. Jizcz;Lvdpy;>fztd; / kidtp ,Nj ,y;yj;jpy; trpf;fpwhHfsh?

10.1 Mk;

10.2 ,y;iy

11. ,y;yj;jpy; trpf;Fk; fhymST

11.1 xUtUlK;

11.2 2-3 tUlK;

11.3 4-6 tUlq;fs;

11.4 >6 tUlq;fs;

APPENDIX XIII

CLINICAL VARIABLE PROFORMA

1. AMI – Any medical illness

1.1 Diabetes mellitus

☐

1.2 Hypertension

☐

1.3 Arthritis

☐

1.4 Respiratory problems

☐

1.5 Others (specify)

☐

1.6 Nil

☐

2. DOI – Duration of medical illness

2.1 ≤ 1 year

☐

2.2 1-5 years

☐

2.3 6-10 years

☐

2.4 >10 years

☐

3. HTM – History of taking medications for major illness

3.1 Yes

☐

3.2 No

☐

4. NTH-No. of times Hospitalized within last five years

4.1 Nil

4.2 1-2

4.3 >3

5. TSH-Treatment seeking behaviour of any illness (most often)

5.1 Uses Medical facilities

5.2 Self medication

5.3 Any others specify

6. HOS-History of Smoking

6.1 Smoker

6.2 Non-Smoker

7. HOA-History of Alcoholism

7.1 Non-alcoholic

7.2 Regular drinker

7.3 Social drinkers

8. PA-Physical activity

8.1 Sedentary

8.2 Moderate

8.3 Heavy

9. TRT-Have you received any training or information on relaxation training before?

9.4 Yes

☐

9.2 No

☐

10. RT-If yes, what was the relaxation therapy you underwent?

10.1 Progressive muscle relaxation

☐

10.2 Yogasana

☐

10.3 Meditation

☐

10.4 Any other(specify)

☐

kUj;Jt \$W NtWghLfisfz;lwpAk; gbtk;

Nehf;fk;

kUj;Jt cly; eyf;FiwghLfs;> kUj;Jt cly;eyf; FiwgLfs; fhyfl;lk;> kUe;Jfs; gad;ghl;L tuyhW> rpfpr;irngWk; Fzeyd;> Gif kw;Wk; kJg;gof;f tuyhW MfpakUj;Jtk; rhHe;j khw;wj;jf;fitfis kjpg;gpLtjw;fhf ,g;gbtk; gad;gLj;jg;gLfpwJ.

mwpTWj;jy;fs;

jaTnra;J gpd;tUk; Nfs;tpfis gbf;fTk;> gjpy;fSf;F mUfpy; toq;fg;gl;Ls;s ngl;bfsfy; bf; nra;aTk; my;yJtoq;fg;gl;Ls;s Nfhbl;l ,lq;fisepug;gTk;. jaTnra;J cq;fsJ gjpy;fis Rje;jpukhfTk; kw;Wk; ntspg;gilahfTk; njhptpf;fTk;. jfty;fs; ufrpakhfitfg;gLk; kw;Wk; Muha;r;rp Nehf;fq;fSf;fhf kl;LNk mit gad;gLj;jg;gLk;.

1. VNjDk; kUj;Jtcly;eyf;FiwghLfs;

1.1 ePuopT (rHf;fiu) Neha;

1.2 uj;jmOj;jk;

1.3 fPy;thjk; (MHj;jphpl;b];)

1.4 Rthrg;gpur;ridfs;

1.5 fz;Giw

1.6 fpilahJ

2. kUj;Jtcly;eyf; FiwghLfspd; fhymST

2.1 1 Mz;bw;Fk; Fiwthf

2.2 1-5 Mz;Lfs;

2.3 6-10 Mz;Lfs;

2.4 > 10 Mz;Lfs;

2.5 fpilahJ

3. kw;wtpahjpf;fhdkUe;jpd; tuyhW

3.1 Mk;

3.2 ,y;iy

4. **fle;jle;JMz;Lfspy; kUj;Jtkidapy; NrHe;jvz;zpf;if**

4.1 Mk;

4.2 ,y;iy

5. **Neha;f;fhdrpfpr;irngWk; Kiw**

5.1 kUj;Jttrjpiag; gad;gLj;jy;

5.2. Rarpfpr;ir /kUe;J

5.3. kw;wit

6. **Gif gpbj;jypd; tptuk;**

6.1 Gif gpbg;gtH

6.2 Gif gpbf;fhjtH

7. **Fbg;gof;ftuyhW**

7.1 Fbg;gof;fk; ,y;yhjtH

7.2 Fbg;gof;fk; Fbg;gtH

7.3 epfo;fspd; NghJFbg;gtH

8. **cly; rhHe;jnray;ghLfs;**

8.1 cl;fhHe;Jgzpnra;gtH

8.2 XusTelkhhbgzpnra;thH

8.3 Mjpfk; Xbahbgzpnra;gtH

9. **ePq;fs;kdijmikjpgLj;Jk; KiwFwpj;J gapw;rpNah my;yJ jftNyh**
ngw;wpUf;fpwPNuh?

9.1 Mk;

9.2 ,y;iy

10. Mk;>vdpy; ve;jtifahdkdmikjpgLj;Jk; KiwiaePq;fs; ngw;wPHfs;?

10.1 %r;rpg;gapw;rp

10.2 Nahfhrdk;

10.3 jpahdk;

10.4 kw;wit

APPENDIX XIV

MINI MENTAL STATUS EXAMINATION

PURPOSE: The Mini Mental Status examination offers a quick and simple way to quantify cognitive function and screen for cognitive loss. Each section of the test involves a related series of question and commands. The individual receives one point for each correct answer.

Name:

DOB:

Years of school:

Date of Exam:

Orientation to Time

Correct

Incorrect

What is today's date?

What is the month?

What is the year?

What is the day of the week today?

What season is it?

Orientation to Place

Whose home is this?

What room is this?

What city are we in?

What country are we in?

What state are we in?

Immediate Recall

Ask if you test his/her memory. Then say “ball” ,”flag”,” tree” clearly and slowly , about 1 second for each . After you have said all 3 words , ask him/her to repeat them – the first repetition determines the score(0-3):

Ball

Flag

Tree

Total: _

Attention

A) Ask the individual to begin with 100 and count backwards by 7. Stop after 5 subtractions. Score the correct subtractions.

93

86

79

72

65

Total: _

Delayed verbal recall

Ask the individual to recall the 3 words you previously asked him/her to remember.

Ball

Flag

Tree

Total: _

Naming

Show the individual a wristwatch and ask him/her what it is. Repeat for pencil.

Watch

Pencil

Repetition

Ask the individual to repeat the following: “No if , ands , or buts”

Stage command

Give the individual a plan piece of paper and say, “take the paper in your hand, fold it in half, and put it on the floor.”

Takes

Folds

Puts

Reading

Hold up the card reading: “close your eyes” so the individual can see it clearly.

Ask him/her to read it and do what it says. Score correctly only if the individual actually closes his/her eyes.

Writing

Give the individual a piece of paper and ask him/her to write a sentence. It is to be written spontaneously. It must contain a subject and verb and be sensible.

Copying

Give the individual a piece of paper and ask him/her to copy a design of two intersecting shapes. One point is awarded for correctly copying the shapes. All angles on both figures must be present, and the figures must have one overlapping angle.



Total score: _

Scoring interpretation

Score = 24-30 _ Normal

Score = 20-23 _ Mild cognitive impairment

Score = 10-19 _ Moderate cognitive impairment.

Score = 0-9 _ Severe cognitive impairment.

FWfpa kdk; rhh;e;j Njh;T

Nehf;fk;

FWfpa kdk; rhh;e;j Njh;T kpfTk; vspa topapd; %yk; mwpAk; Mw;wypd; nray; kw;Wk;
ghjpf;fg;gLk; jpwidAk; mwpa cjTfpwJ.

xt;nthU gFjpapd; Njh;Tk; rpy Nfs;tpfSk;> kw;Wk; nray; jpwd;fisAk; cs;slf;fpaJ.
Xt;nthU rhpahd tpilf;Fk; xU kjpg;ngz; toq;fg;gLk;.

ngah;:

gpwe;j Njjp:

Njh;T nra;j Njjp:

rup

jtW

1. Neu;jjpd; epiyf;Fj;jf;f mikjy;

1.1 ,d;iwa Njjp vd;d?

☐☐

1.2 ,J ve;j khjk;?

☐☐

1.3 ,J ve;j tUlK;?

☐☐

1.4 ,e;j thuj;jpy; ,J ve;j ehs;?

☐☐

1.5 ,J ve;j gUtk;?

☐☐

2. ,lj;jpd; epiyf;Fj;jf;f mikjy;

2.1 ,J ahUila tPL?

☐☐

2.2 ,J ve;j miw?

☐☐

2.3 ehk; ,Uf;Fk; efuk; vd;d?

☐☐

2.4 ehk; ,Uf;Fk; ehL vd;d?

☐☐

2.5 ehk; ,Uf;Fk; khepyk; vd;d?

☐☐

3. cldbahf epidTf;F nfhz;L tUjy;?

ePq;fs; xUtUf;F ,e;j Njh;it nra;Aq;fs;. ePq;fs; \$Wk;NghJ “ge;J” “nfhb”> “kuk;”
nkJthfTk;> njspthfTk; \$wp xU epkplj;jpy; gjpy; \$w nra;aTk; gpwF midj;J %d;W thh;;ijfisAk;
mth;fs; kPz;Lk; \$w Ntz;Lk;. kPz;Lk; \$w nra;J kjpngz; ,ITk;

ge;J

nfhb

kuk;

nkhj;jk; :_

4. ftdk;

ePq;fs; xt;nthUtiuAk; Muk;gj;jpy; ,Ue;J E}W thh;j;ijfis nrhy;y nrhy;yTk; mjw;F gpwF
mjpy; ,Ue;J 7 vd;w vd;id fopj;Jf;nfhz;L tuTk;

93

86

79

72

65

nkhj;jk; :_

5. jhkjg;gLj;jp nrw;fis epidT \$Wjy;

,jw;F Kd;G \$wpa thh;j;ijfis epidTg;gLj;jp \$wTk;

ge;J

nfhb

kuk;

nkhj;jk; :_

6. ngaupLjy;

xU iffbfhuj;ij xUthplk; fhz;gpj;J ,J vJ vd tpdhTjy;. mNjNghy; ngd;rpiyAk; fhl;Lf.

7. nrhd;dijNa kPz;Lk; \$Wjy;

8. epidTf;\$h;jy;

xU nts;isj; jhis vLj;J ePq;fs; nrhy;tij nra;a nrhy;Yq;fs;.

xU Ngg;giu vLj;J> mij ghjpahf kbj;J gpd;G jiuapy; NghLf vd;W \$wTk;

vLj;jy;

kbj;jy;

NghLjy;

9. gbj;jy;

fz;fis %lTk;. gpd; fz;fis jpwe;J njspthf gbffTk;. gpd;G rhpahf mth;fisNa jdpahf gbff
nrhy;yTk;.

10. vOJjy;

xU Ngg;giu vLj;J mth;fis jdpahf xU thf;fpaj;ij vOj nry;yTk;. mth;fis mjpy; tpidnrhy;iy
fz;Lgpbff;f nrhy;yTk;.

11. efy; vLj;jy;

xU Ngg;giu vLf;fr; nra;J mtw;iw mtd; / mts; nfhLj;J mWNfhzj;jpy; ePq;fs; kbj;jJNghy;
mth;fis kbf;fr; nra;J mjd; tbtj;ij nra;a nrhy;yp mjd; Nfhzj;ij fz;Lgpbff;fr; nra;f

nkhj;j kjpg;ngz; :-

kjpg;ngz;zpd; tpsf;fk;:-

kjpg;ngz; = 24-30 ,ay;ghd epiy

kjpg;ngz; = 23-20 epidT Mw;wy; Fiwthf ghjpf;fg;gLjy;

kjpg;ngz; = 19-10 epidT Mw;wy; kpjkhf ghjpf;fg;gLjy;

kjpg;ngz; = 0-9 epidT Mw;wy; fLikahf ghjpf;fg;gLjy;

APPENDIX XV

BLUE PRINT FOR LEVEL OF SATISFACTION

S.NO	CONTENT	ITEMS	PERCENTAGE
1.	Questions related to the researcher	1,2,3,	30%
2.	Questions related to validation therapy	4,5,6,7,8,9,10	70%

APPENDIX XV

TOOL FOR ASSESSING LEVEL OF SATISFACTION ON

VALIDATION THERAPY IN EXPERIMENTAL GROUP OF

OLD AGE PEOPLE

PARTICIPANTS

Purpose

This rating scale is designed to assess the level of satisfaction of the participants.

This is developed by the investigator to assess the satisfaction of the validation therapy among old age people. This is a 4 point rating scale ranging from 4-1 (highly satisfied, satisfied, dissatisfied and highly dissatisfied).

Instructions

There are 10 items below. Kindly read the items. Response extends from highly satisfied, satisfied, dissatisfied and highly dissatisfied. Put a tick mark against your answers. Describe your responses freely and frankly. The responses will be kept confidential and used for research purpose only.

S.no	Items	Highly Satisfied	Satisfied	Dissatisfied	Highly dissatisfied
1.	Explanation regarding validation therapy.				
2.	Approach of the researcher.				
3.	Time spent by the researcher.				

4.	Duration of the programme.				
5.	Arrangements made during the programme.				
6.	The programme was easy to understand.				
7.	Frequency of practicing validation therapy.				
8.	Involvement of the participants.				
9.	Given at the appropriate time.				
10.	Usefulness of validation therapy.				

Scoring key

Highly dissatisfied : Below 25%

Dissatisfied : 25- 50%

Satisfied : 47-73%

Highly satisfied : Above 75%

,izg;G

jd; epiwTmsTNfhy;

Nehf;fk;

,e;jg; gbt; gq;FngWNthhpd; jd; epiwit mwptjw;fhf mikf;fg;gl;Ls;sJ.

nra;Kiw

fPNogj;J Nfs;tpfs; cs;sd. Nfs;tpfisthrpf;fTk;. gjpy;fs;>kpfTk;

jpUg;jpvdJtq;fp>jpUg;jp>kpfTk; mjpUg;jpvd;gJtiucs;sJ. gjpy;fSf;FNeuhf> (√)

nra;aTk;. Cq;fs; gjppyy;>ntspg;gilahfTk;>cz;ikahfTk; ,Uf;fTk;.

cq;fSilaFwpg;Gfs;>Muha;r;rpf;fhfkl;LNkcgNahf;fg;gLk;. cq;fs; ngah; NtWvq;Fk;

ntspaplg;glkhl;lhJ. ed;wp.

thpir vz;.	Nfs;tpfs;	kpfTk ; jpUg;j p	jpUg;jp	mjpUg;j p	kpfTk; mjpUg;jp
1.	Muha;r;rpahsh; ,e;jepfo;r;rpiaf; Fwpj;Jtpsf;fk; mspj;Jj				
2.	Muha;r;rpahshpd; mZFKiw				
3.	Muha;r;rpahsh; nrytopj;jNeuk;				
4.	epfo;r;rpelj;jpafhyfl;lk;				
5.	epfo;r;rpapd;NghJnra;ag;gl;IVw;ghL fs;				
6.	epfo;r;rpvspjpy; GhpAk;gb,Ue;Jj				

7.	nray;Kiwtpsf;fk;;				
8.	epfo;r;rpapy; gq;FngWgthpd; <LghL				
9.	rhpahdNeuj;jpy; epfo;r;rpmikg;G				
10.	epfo;r;rpapd; cgNahfk;				

APPENDIX XVI

Item wise Frequency and Percentage Distribution of the Level of Satisfaction Regarding Validation Therapy in the Old Age People.

Items	Highly Satisfied		Satisfied		Dissatisfied		Highly dissatisfied	
	n	p	n	p	n	p	n	p
Explanation regarding Validation therapy	23	76.6	7	23.4	-	-	-	-
Approach of the Researcher	23	76.6	7	23.4	-	-	-	-
Time spent by the Researcher	25	83.4	5	16.6	-	-	-	-
Duration of the programme	24	80	6	20	-	-	-	-
Arrangement made during the programme	23	76.6	5	23.4	-	-	-	-
The Program was easy to understand	25	83.4	5	16.6	-	-	-	-
Frequency of practicing Validation therapy	23	76.6	7	23.4	-	-	-	-

Involvement of participants	25	83.4	5	16.6	-	-	-	-
Given at the appropriate time	30	100	-	-	-	-	-	-
Usefulness	23	76.6	4	23.4	-	-	-	-

Table shows that majority of the old age people 76.6% were highly satisfied and while rest of them 83.4% were satisfied with all the aspects of Validation therapy.

APPENDIX XVII

DATA CODE SHEET

DEMOGRAPHIC VARIABLE PROFORMA

SN-Sample Number

1.AGE- Age in years

- 1.1 60- 64
- 1.2 66- 69
- 1.3 70-75

2.GEN- Gender

- 2.1 male
- 2.2 female

3. REL- Religion

- 3.1Hindu
- 3.2Muslim
- 3.3 Christian
- 3.4 Any other (specify)

4. EDU-Education

- 4.1 Non literate
- 4.2 Primary education
- 4.3 Secondary Education
- 4.4 Graduate & above

5.TOF – Type of the family

- 5.1 Nuclear
- 5.2 Joint

6.MAR St – Marital Status

- 6.1 Married
- 6.2 Unmarried
- 6.3 Separated/divorced

7.MI-Monthly income

- 7.1 nil
- 7.2 ≤2000
- 7.3 2001-6000
- 7.4 6001-10,000
- 7.5 ≥10,000

8.SOI – Source of income

- 8.1 Pensioners
- 8.2 Govt aid.
- 8.3 Property
- 8.4 Savings
- 8.5 Others [specify].....

9.NOC – Number of children

- 9.1 No children
- 9.2 One
- 9.3 Two
- 9.4 More than two

10.SRH-If spouse is alive, whether he/she is residing in this home

- 10.1 Yes
- 10.2 No

11.DSO-Duration of stay in the old age home

- 11.0 ≤ 1 year
- 11.2 2-3 years
- 11.3 4-6 years
- 11.4 > 6 years

APPENDIX XVII

DATA CODE SHEET

CLINICAL VARIABLE PROFORMA

1. AMI – Any medical illness	6.HOS-History of Smoking
1.1 Diabetes mellitus	6.1 Smoker
1.2 Hypertension	6.2 Non-Smoker
1.3 Arthritis	7.HOA-History of Alcoholism
1.4 Respiratory problems	7.1 Non-alcoholic
1.5 Others (specify)	7.2 Regular drinker
1.6 Nil	7.3 Social drinkers
2. DOI – Duration of medical illness	8.PA-Physical activity
2.1 ≤1 year	8.1 Sedentary
2.2 1-5 years	8.2 Moderate
2.3 6-10 years	8.3 Heavy
2.4 >10 years	
3. HTM – History of taking medications for major illness	9.TRT-Have you received any training or information on relaxation training before?
3.1 Yes	9.1 Yes
3.2 No	9.2 No
4. NTH-No. of times Hospitalized within last five years	10.RT-If yes, what was the relaxation therapy you underwent?
4.1 Nil	10.1 Progressive muscle relaxation
4.2 1-2	10.2 Yogasana
4.3 >3	10.3 Meditation
5. TSH-Treatment seeking behaviour of any illness (most often)	10.4 Any others(specify)
5.1 Uses Medical facilities	
5.2 Self medication	
5.3 Any others specify	

APPENDIX –XVIII
MASTER CODE SHEET
CONTROL GROUP

	DEMOGRAPHIC VARIABLES											COGNITION SCORES	
S.NO	AGE	GEN	EDUN	MAR	SPO	SOI	MI	NOC	REL	TOF	DOS	PRE TEST	POST TEST
1	1.1	2.1	3.1	4.2	5.2	6.1	7.1	8.1	9.1	10.1	11.2	15	17
2	1.2	2.2	3.2	4.4	5.2	6.1	7.1	8.2	9.2	10.2	11.3	22	20
3	1.3	2.2	3.2	4.3	5.1	6.1	7.1	8.2	9.2	10.2	11.4	20	22
4	1.3	2.2	3.3	4.3	5.1	6.1	7.1	8.3	9.2	10.1	11.4	17	18
5	1.1	2.2	3.2	4.4	5.2	6.1	7.1	8.4	9.2	10.2	11.3	16	17
6	1.2	2.1	3.1	4.2	5.2	6.1	7.1	8.1	9.2	10.2	11.2	17	20
7	1.1	2.1	3.1	4.3	5.1	6.1	7.1	8.3	9.2	10.1	11.4	25	24
8	1.3	2.1	3.2	4.3	5.1	6.1	7.1	8.2	9.1	10.2	11.3	22	19
9	1.1	2.2	3.2	4.2	5.2	6.1	7.1	8.1	9.1	10.1	11.2	20	18
10	1.2	2.2	3.2	4.4	5.2	6.1	7.1	8.3	9.1	10.2	11.2	19	21
11	1.2	2.1	3.2	4.2	5.2	6.1	7.1	8.1	9.2	10.1	11.4	17	19
12	1.3	2.1	3.3	4.3	5.1	6.1	7.1	8.2	9.2	10.1	11.3	18	16
13	1.3	2.2	3.1	4.3	5.2	6.1	7.1	8.2	9.1	10.1	11.2	23	20
14	1.1	2.2	3.1	4.3	5.1	6.1	7.1	8.2	9.1	10.1	11.4	24	18
15	1.3	2.2	3.2	4.4	5.2	6.1	7.1	8.3	9.2	10.1	11.3	26	23
16	1.2	2.2	3.3	4.4	5.2	6.1	7.1	8.3	9.2	10.2	11.2	19	19
17	1.2	2.1	3.3	4.2	5.2	6.1	7.1	8.1	9.1	10.2	11.3	15	18
18	1.1	2.1	3.2	4.3	5.1	6.1	7.1	8.4	9.1	10.1	11.3	12	15
19	1.1	2.2	3.2	4.3	5.1	6.1	7.1	8.3	9.1	10.2	11.4	17	20
20	1.1	2.2	3.2	4.3	5.2	6.1	7.1	8.3	9.2	10.2	11.4	23	21
21	1.2	2.1	3.1	4.4	5.2	6.1	7.1	8.2	9.2	10.1	11.4	20	20
22	1.2	2.1	3.1	4.3	5.1	6.1	7.1	8.3	9.1	10.2	11.3	19	18
23	1.1	2.2	3.2	4.3	5.1	6.1	7.1	8.3	9.1	10.2	11.3	21	17
24	1.3	2.2	3.2	4.4	5.2	6.1	7.1	8.2	9.2	10.2	11.2	18	23
25	1.2	2.2	3.2	4.3	5.1	6.1	7.1	8.2	9.2	10.2	11.3	16	18
26	1.1	2.2	3.3	4.2	5.2	6.1	7.1	8.1	9.2	10.1	11.4	25	23
27	1.1	2.1	3.3	4.3	5.1	6.1	7.1	8.2	9.1	10.1	11.4	15	17
28	1.2	2.2	3.1	4.3	5.1	6.1	7.1	8.2	9.1	10.1	11.4	21	20
29	1.3	2.1	3.1	4.4	5.2	6.1	7.1	8.3	9.1	10.2	11.4	23	18
30	1.3	2.1	3.2	4.3	5.1	6.1	7.1	8.4	9.2	10.2	11.4	17	20

APPENDIX XVIII

EXPERIMENTAL GROUP

	DEMOGRAPHIC VARIABLES											COGNITION SCORES	
S.NO	AGE	GEN	EDUN	MAR	SPO	SOI	MI	NOC	REL	TOF	DOS	PRE TEST	POST TEST
1	1.3	2.2	3.2	4.3	5.2	6.1	7.1	8.1	9.1	10.1	11.4	18	25
2	1.1	2.2	3.3	4.4	5.2	6.1	7.1	8.2	9.1	10.1	11.3	23	27
3	1.2	2.2	3.4	4.4	5.2	6.1	7.1	8.1	9.1	10.1	11.4	20	27
4	1.3	2.2	3.3	4.2	5.2	6.2	7.1	8.1	9.1	10.1	11.4	18	27
5	1.1	2.2	3.3	4.2	5.2	6.2	7.1	8.1	9.1	10.1	11.4	15	20
6	1.2	2.1	3.3	4.4	5.2	6.2	7.1	8.2	9.1	10.1	11.4	19	24
7	1.1	2.2	3.4	4.2	5.2	6.2	7.1	8.1	9.1	10.1	11.4	23	25
8	1.2	2.1	3.1	4.3	5.1	6.1	7.1	8.2	9.1	10.1	11.3	17	24
9	1.1	2.2	3.2	4.4	5.2	6.1	7.1	8.3	9.1	10.1	11.3	20	24
10	1.2	2.1	3.2	4.2	5.2	6.1	7.1	8.1	9.1	10.2	11.3	23	25
11	1.3	2.2	3.3	4.4	5.2	6.1	7.1	8.2	9.1	10.2	11.4	18	20
12	1.3	2.2	3.2	4.4	5.2	6.1	7.1	8.3	9.1	10.2	11.4	17	19
13	1.2	2.1	3.3	4.3	5.1	6.1	7.1	8.2	9.1	10.1	11.4	15	18
14	1.1	2.2	3.2	4.4	5.2	6.1	7.1	8.3	9.1	10.1	11.3	24	27
15	1.1	2.1	3.3	4.4	5.2	6.1	7.1	8.3	9.1	10.2	11.3	23	26
16	1.2	2.2	3.3	4.1	5.1	6.1	7.1	8.2	9.1	10.1	11.3	22	25
17	1.1	2.2	3.2	4.2	5.2	6.1	7.1	8.1	9.1	10.2	11.3	20	25
18	1.1	2.2	3.3	4.2	5.2	6.1	7.1	8.1	9.1	10.2	11.4	18	20
19	1.3	2.1	3.2	4.3	5.2	6.1	7.1	8.3	9.1	10.1	11.4	23	26
20	1.3	2.1	3.3	4.4	5.2	6.1	7.1	8.3	9.1	10.1	11.4	24	27
21	1.2	2.2	3.2	4.3	5.1	6.1	7.1	8.2	9.1	10.2	11.3	17	18
22	1.2	2.2	3.2	4.4	5.2	6.1	7.1	8.2	9.1	10.2	11.3	21	25
23	1.3	2.1	3.3	4.4	5.2	6.1	7.1	8.3	9.1	10.1	11.4	24	27
24	1.1	2.2	3.3	4.3	5.1	6.1	7.1	8.2	9.1	10.1	11.4	15	20
25	1.1	2.2	3.2	4.2	5.2	6.1	7.1	8.1	9.1	10.1	11.4	17	24
26	1.3	2.1	3.2	4.4	5.2	6.1	7.1	8.3	9.1	10.1	11.3	18	24
27	1.2	2.2	3.2	4.4	5.2	6.1	7.1	8.3	9.1	10.2	11.3	23	27
28	1.2	2.2	3.3	4.3	5.1	6.1	7.1	8.3	9.1	10.2	11.4	20	26
29	1.1	2.1	3.3	4.2	5.2	6.1	7.1	8.1	9.1	10.1	11.4	21	28
30	1.2	2.2	3.3	4.4	5.2	6.1	7.1	8.2	9.1	10.1	11.4	23	25